

Experimental Existential Psychology: Coping with the Facts of Life

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Why am I here? Who am I? How do I relate to other people and to nature itself? How much control do I have over my life? And what happens when life ends? These are questions all people must deal with, sometimes through reasoned conscious deliberations, but often through unconscious mechanisms that keep these issues from being *too* bothersome. Although people's struggles with the human condition are deeply personal, they are also social and cultural; these struggles are played out in the context of social relationships and cultural milieus. Indeed, every known society offers its members a host of stories and symbols that can be used to forestall and sometimes avoid confrontation with the ultimate realities of human existence.

Existential psychology seeks to understand how people cope with these facts of life – what Irvin Yalom (1980, p. 8) referred to as the “givens of existence.” Inquiries into how people cope with these realities go back to the earliest written documents, such as the *Epic of Gilgamesh*, in which a grief stricken king ponders the implications of the death of a friend for his own ultimate fate, and flees from the fear this provokes by searching for the “Islands of Immortality.” From Plato, Socrates, Aristotle, and Seneca onwards, thinkers across diverse disciplines have sought to delineate the human condition and examine how people's understanding of these issues affects their lives. From antiquity, confrontation with existential dilemmas was viewed as something all humans must face. Scholarly consideration of these issues gained momentum in the 19th and early 20th century with the emergence of existential philosophy, and the analyses of Kierkegaard, Nietzsche, Heidegger, Sartre, Buber, and many others. Philosopher William Barrett (1958, p. 126) defined existentialism as “*a philosophy that confronts the human situation in its totality to ask what the basic conditions of human existence are and how man can establish his own meaning out of these conditions.*”

Existential psychology grew out of existential philosophy to emphasize the subjective aspect of human experience. Binswanger (1956, p. 196) summed up the constructive nature of this approach, writing, “there is not one space and time, but as many spaces and times as there are subjects.” Otto Rank set the tone for much of what was to come by building a theory of how the twin fears of life and death affect human development and relations to others, subverting the operation of the emerging will and thus undermining the emergence of a truly autonomous being. Existential thought in psychology began around the time that experimental psychology was emerging as a serious scientific discipline in which, led by behaviorists such as Watson and Skinner, the subjective inner life of the individuals was considered impossible to broach scientifically. Consequently, existential and experimental psychology had virtually no contact with each other for most of the 20th century, except for the occasional caustic comment by proponents of one approach regarding the hopeless absurdity of the other.

A lot has changed since then. Social psychological inquiry into social cognition, the self, interpersonal relationships, self-regulation, and intergroup relations led to theoretical questions conducive to existential analyses. New research methods inspired by the cognitive revolution made it possible to assess internal psychological states and processes. Rapid cultural change resulting from progress in the natural, biological and social sciences, and existential philosophy itself, brought questions of life’s meaning and conflicts between new and traditional answers to these questions to the forefront. The escalation of cultural, religious, and ideological conflicts into violence and genocide provided dramatic demonstrations of the role that meaning systems play in social life and increased the urgency of addressing these issues. A new generation of psychologists was unwilling to accept the impossibility of scientific inquiry into existential

concerns, leading to the gradual emergence of experimental existential psychology (XXP; Pyszczynski, Greenberg, & Koole, 2003).

This chapter will provide a survey of the current state of this emerging discipline. Koole, Greenberg, & Pyszczynski (2004) noted five basic issues that are the focus of most contemporary XXP work: How do people cope with knowledge of their own mortality, the possibility that life is meaningless, the uncertain nature of self and identity, the limitations of knowing and being known by others, and constraints on and possibilities of freedom to choose? This chapter discusses recent theory and research on each of these Big Five existential concerns. This list is meant only to provide a means of organizing the emerging XXP literature and is not meant to be an exhaustive summary of all existential concerns. This is a daunting task, because unlike the empirically orthogonal Big Five personality traits, the Big Five existential concerns are inextricably linked to each other in myriad ways. This chapter elucidates some of the ways these existential issues relate to and interact with each other. But first, we consider how the existential approach builds on current evolutionary thought, but adds an important element that is missing or given scant consideration in most evolutionary analyses.

The Costs of Evolutionary Adaptation: Problems Created by Intelligence

A common theme running through much of XXP is that despite their adaptive value, the evolution of sophisticated intellectual capacities created serious adaptive challenges. Once these capacities emerged, humans had to cope not only with the demands of their external environment, but also with the psychological consequences of their *awareness* of these problems. Evolutionary psychologists have devoted a great deal of attention to adaptive problems resulting from changes in external environment, but have virtually ignored the adaptive challenges posed by the *contents of consciousness* (see Deacon, 1997 for a notable exception). These self-

generated adaptive challenges arise only in creatures sufficiently intelligent to be aware of themselves and the problems they face. The Big Five existential concerns all result from the juxtaposition of human motives with awareness of the limitations of the human condition.

The emergence of meaning systems provided ways of addressing these new challenges. Problems resulting from the contents of consciousness could be solved by changing the contents of consciousness. Freud's (1915/1961) analysis of defense mechanisms and Festinger's (1957) analysis of cognitive dissonance reduction illustrate this type of coping. Threats posed by the contents of consciousness were also addressed through shared systems of meaning, or *cultural worldviews*. Beliefs, values, and customs that effectively reduced existential problems were communicated among members of groups, and the most compelling of these became shared cultural knowledge. Although most students of culture emphasize the material advantages of cultural worldviews (e.g, cultural materialists, such as Harris, 1979), an existential conception of culture, while not denying these concrete material benefits, stresses the role of culture in addressing uniquely human existential concerns. Cultures provide a storehouse of information that people use to survive, maintain social harmony, secure mates, ensure the survival of their offspring, and cope with the existential realities of the human condition.

It is also possible that the use of culture and psychological maneuvers to cope with this new source of distress selected for brains that were more effectively calmed in this way. As with many claims about possible evolved changes in brain structure, the idea that brains evolved to be more effective in their psychological maneuvers and ability to use the fear-assuaging elements of cultural belief systems is speculative and in need of empirical validation. However, the idea that the contents of human consciousness exerted selective pressure on brain evolution is consistent with other claims within evolutionary psychology that the human brain evolved to cope with

specific social and sexual challenges that became more pressing as homo sapiens were emerging as a species (e.g., Tooby & Cosmides, 1992). What sorts of thoughts would be sufficiently disturbing to change the nature of humankind in such a profound manner?

No One Here Gets Out Alive

A self-conscious creature capable of imagining events that have not yet happened will invariably become aware of the inevitability of its own death. This is unacceptable for an animal born with a variety of evolved adaptations that function to keep it alive. William James (1890) referred to death as the “worm at the core” of the human condition that turns us all into “melancholy metaphysicians.” Ernest Becker (1973) viewed death as the central wellspring of human motivation. By the time our ancestors’ intelligence evolved to be able to recognize the inevitability of death, these intellectual abilities opened the door to more sophisticated thinking about other aspects of life. Existential motives had arrived and humankind was forever changed.

Terror Management Theory (TMT)

Building on Ernest Becker’s synthesis of ideas from diverse sources, TMT posits that fear of death underlies the human need for transcendent meaning and personal and collective value. The pursuit of meaning and self-esteem influences most forms of human behavior. TMT was initially developed to explain why people need meaning and self-esteem and why encounters with different others are so often fraught with prejudice and conflict (Greenberg, Pyszczynski, & Solomon, 1986). Over the last two decades, TMT has been applied to a wide range of social and psychological phenomena, including aggression, altruism, attachment, affiliation, self-esteem striving, the pursuit of cognitive structure, aesthetics, objectification of women, inferential biases, the desire for fame, interpersonal attraction, interpersonal and intergroup conflict, social influence, human sexuality, disgust, health-related behavior, mental illness, robotics, attitude

development and change, political ideology, international terrorism, war, and peace-making (for a review of these and other applications of TMT, see Greenberg, Solomon, & Arndt, 2008).

The theory starts with the proposition that awareness of the inevitability of death in an animal biologically predisposed to live creates the potential for terror, which would seriously impede goal-directed behavior unless managed in some way. Humankind “solved” the problem of terror by using the same intellectual abilities that gave rise to it, to infuse emerging cultural worldviews with meanings that provided the potential for humans to have value and gave them hope of transcending death. Explanations for life and the universe that helped manage the potential for terror were especially appealing and likely to be communicated to and accepted by others. Buying into such death-denying worldviews enabled people to manage existential terror, as well as providing social cohesion and a means of coordinating and controlling individual behavior. What better way of controlling people than convincing them that only certain beliefs, values, and behavior would qualify them for immortality?

Cultures provide two types of immortality: literal and symbolic. Literal immortality refers to beliefs that life continues after physical death, typically in the form of beliefs about heaven, reincarnation, or other forms of afterlife. Symbolic immortality entails continuing on as part of something greater and longer lasting than oneself, such as a family or nation; leaving a lasting mark on the world, in the form of children, achievements, monuments, or ideas is another route to symbolic immortality.

Qualification for either form of immortality is reserved for those who believe in the culture’s worldview and live up to its standards. Doing so bestows self-esteem, the sense of being a valuable participant in a meaningful and eternal reality. Thus self-esteem is intimately connected to the cultural worldview from which it is derived. What provides feelings of value in

one culture might provide feelings of shame and guilt in another. For example, while self-promoting behavior provides self-esteem for many residents of individualist cultures, such behavior might bring shame to members of collectivist cultures, where cooperative, communal, and modest behavior is more likely to provide self-esteem. Although self-esteem is a universal human need, the way it is obtained varies considerably from culture to culture.

From the perspective of TMT, then, people are protected from the potential for terror produced by death awareness by *ideas*, which are inherently fragile bases of security. Effective terror management requires certainty of the absolute validity of these ideas, even though there is no real way of knowing whether any particular belief or value is ultimately correct. To obtain this certitude people rely on consensual validation from others. Those who share one's worldview imply that it is an accurate reflection of reality, but those with different worldviews undermine this faith, by raising the possibility that one's worldview might be wrong. This leads people to react favorably to those who share their worldviews and unfavorably to those with different worldviews. Consensual validation is also needed to maintain a sense of personal value – people find it hard to believe that they are good persons if most others belittle them. Thus, because of the protection that self-esteem affords, people react favorably to those who value them and unfavorably toward those who do not.

TMT provides the following answers to the questions it was designed to address: People need self-esteem and faith in their worldviews to manage the potential for existential anxiety that results from awareness of the inevitability of death. Because confidence in one's worldview and self-esteem depends on consensual validation from others, people react positively to those who support these structures and negatively to those who threaten them. Much human discord results from people's relentless pursuit of self-esteem and faith in their worldviews to buffer the fear of

death. The terror-driven pursuit of meaning, self-esteem, and connections to others affect many forms of human social behavior that, on the surface, appear unrelated to each other.

Evidence for the basic propositions. Over 400 studies from a diverse array of countries and cultures have supported the basic propositions of TMT. Space limitations do not allow for a thorough review of this research here, so we just briefly summarize support for the fundamental propositions of the theory and then discuss studies that are particularly relevant to specific issues. For a more detailed review, see Greenberg et al. (2008).

Research has corroborated five distinct but inter-related hypotheses regarding the fundamental propositions of TMT: (1) increasing self-esteem decreases anxiety in response to threats (e.g., Greenberg et al., 1992); (2) subtle reminders of death (mortality salience; MS) increase positive reactions to those who support one's worldview and negative reactions to those who threaten it (e.g. Greenberg et al., 1990), self-esteem striving (e.g., Greenberg et al., 1992), and preference for information that is well-structured or fits specific templates for meaning (relative to numerous control conditions; e.g., Landau et al., 2004); (3) increasing self-esteem or validating one's worldview eliminates MS effects on self-esteem striving and worldview defense (e.g.; Harmon-Jones et al., 1997) (4) threats to self-esteem or one's worldview increase the accessibility of death-related thoughts and boosts to self-esteem or worldview reduce the accessibility of death-related thoughts (e.g., Harmon-Jones et al., 1997); and (5) evidence ostensibly supporting the existence of an afterlife eliminates the effect of MS on self-esteem striving and worldview defense (e.g., Dechesne et al., 2003). These effects have been observed across diverse aspects of cultural worldviews and sources of self-esteem. We discuss specific applications of the theory in later sections on other existential concerns. This research provides converging evidence for TMT by showing that cultural worldviews and self-esteem provide

equanimity by reducing the potential for anxiety engendered by the accessibility of death-related thoughts.

Cognitive and motivational processes underlying terror management. TMT provides a detailed account of the processes through which awareness of death exerts its effects on thoughts and behavior. This dual process model of conscious and non-conscious defense was stimulated by the initially surprising but now well-replicated findings that subtle reminders of death produce stronger defense than more blatant ones, that such effects are most robust when people are distracted from the problem of death after being reminded of it, and that these responses to thoughts of death are not mediated by consciously experienced affect (Pyszczynski, Greenberg, & Solomon, 1999).

The dual process model of terror management (Pyszczynski et al., 1999) specifies distinct defensive responses to conscious and non-conscious death-related ideation. People respond to thoughts of death in current focal attention with *proximal* defenses, which either push such thoughts out of consciousness or move death into the distant future by denying one's vulnerability to things that could terminate one's existence. For example, people cope with conscious thoughts of death by emphasizing their health, promising to take better care of themselves, and convincing themselves that death is not a problem for the foreseeable future. When death-related thoughts are no longer conscious but still accessible, people engage in the *distal* defenses of clinging to and defending their worldviews and striving for self-esteem and close interpersonal attachments. Distal defenses reduce the accessibility of death-related thoughts and prevent them from entering consciousness.

In support of the dual process model (Pyszczynski et al., 1999), stimuli that increase death thought accessibility increase commitment to one's worldview, which in turn reduces

death thought accessibility to baseline levels (e.g., Arndt, Greenberg, Pyszczynski, & Solomon, 1997; Harmon-Jones et al., 1997). Furthermore, although a delay and distraction are typically needed to produce increased worldview defense after consciously processed reminders of death, such defenses emerge immediately after subliminal death reminders (Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997). Although the death reminders used in these studies typically do not arouse negative affect, they do increase the potential to experience anxiety and this increased potential motivates worldview defense. Greenberg et al. (2003) supported this claim by showing that giving participants a placebo believed to block anxiety eliminated the effect of death reminders that was found in the absence of this placebo. MS also increases the accessibility of aspects of one's worldview that are useful for terror management (Arndt, Greenberg, & Cook, 2002).

Recent studies suggest there may also be an affectively based system for coping with the fear of death that is activated shortly after reminders of death. DeWall and Baumeister (2007) showed that reminders of death initiate increased attention to positive affect to counteract the anxiety that could otherwise arise. They demonstrated that MS increased completions of wordstems with positively valenced affective words and marginally decreased completions with negatively valenced affective words. In a related vein, McDonald and Lipp (in press) found that MS produced a significant reduction in attentional bias for fear-relevant stimuli obtained in the absence of MS. This new mode of proximal defense merits further exploration.

Fleeing the body and nature. Despite the tremendous potential for pleasure inherent in sexual activity and the essential role that sexual intercourse plays in the propagation of genes, people are typically ambivalent about sex. Virtually all cultures have norms, taboos, and rituals surrounding sexuality. Freudian theory and most other analyses of the problems surrounding

sexuality posit that people are troubled by their bodies because of the prohibitions and taboos that cultures impose on them. But this raises the question of why such cultural restraints are such a universal aspect of human existence. And it's not just sex that is problematic: Bodily functions, such as urination, defecation, menstruation, lactation, and drooling, and body products such as urine, feces, blood, milk, and mucous are often the source of embarrassment and disgust. Although cultures vary considerably in the way this ambivalence is expressed, coming to terms with one's physical nature is a universal existential problem.

Goldenberg and colleagues (e.g., Goldenberg, Pyszczynski, Greenberg, & Solomon, 2000) used TMT and its intellectual forebears, especially the ideas of Otto Rank and Ernest Becker, to address this question. As Becker (1973) argued, the human body is a problem because it is the one aspect of us for which death and decay simply cannot be denied. One of the most common (but not universal) cultural solutions to the problem of death is to separate ourselves from the rest of nature, drawing a sharp distinction between humans and all other animals. Cultures that do not separate humans from nature (e.g., San Bushmen of the Kalahari; Hollman, 2007) imbue the natural world itself with spiritual power, thus making it unnecessary to separate from it. Because our bodies are clearly physical and creaturely, people also strive to distinguish themselves from their bodies, and elevate their humanity by imbuing human life with spirits, souls, or other ethereal essences that continue to exist after death.

To cope with this body-related anxiety, people cover their bodies with anything from a fig leaf to the latest fashions; seek beauty by exercising, dieting, and wearing make-up; doing potentially harmful things like injecting themselves with collagens and botulism toxins to maintain cultural standards of beauty; burning their skin to darken it or avoiding sun to keep it pale. The body is transformed from a physical entity to a symbolic one, which might be an

object of beauty, a pillar of strength, a sign of social status, or an offering to a deity. The appearance and functioning of one's body becomes a source of self-esteem, and people work to bring it in line with the standards of their culture. Physical appearance is one of the most important sources of self-esteem for both sexes and, in most cultures, especially for women.

Goldenberg, Arndt, Hart, & Brown (2005) reviewed evidence supporting this analysis. A number of studies show that reminding people of death leads to more negative evaluations of essays that emphasize similarities between humans and other animals, more positive evaluations of essays that emphasize differences between humans and other animals, and greater disgust regarding the human body, its by-products, and animals (e.g., Goldenberg et al., 2001); answering questions about or viewing pictures of bodily wastes increases the accessibility of death-related thoughts (Cox, Goldenberg, Pyszczynski, & Weise, 2007); and reminders of death increase the tendency of people with high body self-esteem to identify with their bodies and find sex more appealing (Goldenberg, Pyszczynski, McCoy, Greenberg, & Solomon, 1999). Arndt and Goldenberg (2008) reviewed research documenting the potentially disastrous consequences of this death-driven flight from the body for physical health, including less thorough breast exams among women, avoidance of effective sun protection, and increased smoking.

Applying these ideas to ambivalence about sex, Goldenberg et al. (1999) found that among neurotic individuals, reminders of death decreased the appeal of the physical but not emotional aspects of sex. This effect was eliminated when participants were first primed with thoughts of romantic love, presumably because love transforms sex into something ethereal and potentially sacred. In addition, high neurotics responded to thoughts of the physical aspects of sex with increased death thought accessibility, but this effect was eliminated by romantic love primes. These same effects have been found independent of neuroticism among people who had

been primed with thoughts of similarities between humans and other animals (Goldenberg, Cox, Pyszczynski, Greenberg, & Solomon, 2002); this supports the contention that it is the similarity to animal behavior that makes sex troubling. MS also leads to more negative evaluations of attractive women dressed in a sexually provocative way but not when they were dressed in more “innocent” attire (Landau et al, 2006).

Existential ambivalence towards the body may also explain why women are more objectified than men. Women play the more obvious and creaturely role in reproduction, manifested in menstruation, pregnancy, childbirth, and breast feeding – all topics that make many people queasy and for which most cultures have rituals to hide or disguise (Goldenberg & Roberts, 2004). For example, many cultures isolate menstruating women and keep them away from food products. By putting women on a pedestal and emphasizing their delicacy and ethereal beauty, cultures elevate them above these creaturely functions. Consistent with this reasoning, research has shown that a woman who inadvertently dropped a tampon (as opposed to another feminine item, a hairclip) was disliked and physically avoided; more important for the analysis of the roots of objectification, tampon exposure increased the importance that both men and women attributed to physical attractiveness in assessing a woman’s value (Roberts, Goldenberg, Power, & Pyszczynski, 2002). Other research has shown that MS leads to more negative reactions to breast-feeding women (Cox, Goldenberg, Arndt, & Pyszczynski, 2007).

People’s ambivalent reactions to the body’s biological functions seem to parallel a broader ambivalence towards the forces of nature (Koole & Van den Berg, 2004, 2005). Nature is inherently associated with both life and death. Indeed, people report that visiting wilderness settings triggers thoughts about death (Koole & Van den Berg, 2005). Furthermore, reminders of death have been found to lead to more negative evaluations of wilderness and more positive

evaluations of cultivated nature. Terror management concerns may thus be at least partly responsible for the growing rift between human civilization and nature.

In sum, TMT draws attention to the role that death plays in human life. Although people vary in the extent to which they consciously think and worry about their mortality, TMT argues that knowledge of this fact of life exerts a profound influence on the behavior of all human beings. Awareness of death changes the way humans pursue meaning, relationships, identity, freedom, and sex. In this sense it is, as William James claimed, the “worm at the core” of the human experience. But death is not the only existential problem humans must face.

What Does it all Mean?

Starting with early work on attitudes and person perception, and gaining momentum with Heider’s (1958) “naïve psychology of action,” social psychology has long been dominated by the assumption that the meanings people assign to their social worlds are critical determinants of their thoughts, feelings, and behavior. Early work on the quest for meaning emphasized the interplay between rational and emotional forces in determining people’s understanding of their social worlds (e.g., Festinger, 1957; Heider, 1958). Kruglanski’s (1980) lay epistemology theory depicts the interplay between a need for structure, both general and specific, and a need for accuracy. The need for general structure reflects a wide-ranging need for meaning – an answer, any answer -- that helps make sense of the situation so the individual can act effectively. The need for specific structure reflects a need for specific beliefs and inferences, to satisfy various needs, for things such as self-esteem, cognitive consistency, and justice. The need for structure leads to more rapid freezing on conclusions and shutting down of inferential processes. A need for accuracy, on the other hand, reflects a desire for the correct or best possible conclusion, and leads to more thorough processing. These competing needs determine the processes that produce

meanings. The inferences that guide people's behavior reflect a compromise among these forces that enable them to maintain an "illusion of objectivity" about their worldviews

Meaninglessness and Uncertainty

The notion of conflict between desires and reality is central to the existential concerns that are the focus of this chapter. These ideas have influenced a new generation of theories that extend our understanding of the pursuit of meaning and the avoidance of uncertainty.

Meaning Maintenance. The meaning maintenance model (MMM; Heine, Proulx, & Voss, 2006) posits that people "abstract and construct mental representation of expected relations – meaning frameworks – that serve a broad array of domain-specific adaptive functions" (p. 4). The MMM construes meaning frameworks very broadly, as relations between two or more bits of information. Research on the MMM has focused primarily on how people respond to disruptions to their meaning frameworks. Although MMM concurs with past theories (e.g., Festinger, 1957; Kruglanski, 1980) that people typically respond to such disruptions by changing one or more of the cognitive elements that clash, research on it has focused especially on the idea that "in the face of meaninglessness, we may *reaffirm* alternative meaning frameworks to restore the general feeling that our experiences make sense" (Proulx & Heine, in press, p. 5), a process they refer to as *fluid compensation*. Thus Heine and colleagues view the need for meaning as so general that different meaning systems are to some extent functionally interchangeable; affirming meaning in one domain can mitigate disruption in an unrelated realm of meaning. Research has shown that threats to diverse meaning frameworks, including feelings of personal alienation, thoughts that life is pointless, awareness of one's mortality, inconsistent aspects of self-concept, absurdist literature, or surrealist art can all lead to affirmation of unrelated elements of people's worldviews (for a review, see Proulx & Heine, 2006).

Consistent with the MMM, studies have shown that discrepancies of which people are unaware can also lead to affirmation of unrelated meaning frameworks (Proulx & Heine, in press). In two studies, participants were interacting with an experimenter, who left the room, and was replaced by an identically dressed different experimenter. Although few participants noticed the change, this unnoticed discrepancy led to harsher judgments of moral transgressors. A third study exposed all participants to this change of experimenters and had them drink a beverage that was spiked with a placebo that they were led to believe would either increase their arousal or have no side effect. Following the logic of Zanna and Cooper's (1974) classic dissonance research, they found that participants who consumed the placebo expecting it to produce arousal showed less severe judgments of the moral transgressors. This finding was interpreted as evidence that participants misattributed the arousal produced by the subliminal incongruity to the placebo pill, and this reduced their motivation to seek meaning in other domains to compensate for the incongruity. The findings of Proulx and Heine (2008) suggest that fluid compensation is a response to the arousal or distress that even unperceived threats to meaning structures produce. These findings are consistent with earlier work showing that affirmation of values unrelated to the source of cognitive dissonance can eliminate the need for other modes of dissonance reduction (Steele, 1988). Indeed, many of the MMM studies could be viewed as demonstrations of self-affirmation in response to cognitive dissonance produced by perceived inconsistencies and anomalies.

The threat of uncertainty. In a related vein, *uncertainty management theories* (e.g., McGregor, Zanna, Holmes, & Spencer; 2001; van den Bos, 2001) argue that people are motivated to maintain certainty about life and the future, and that this need for certainty underlies the need for justice, as well as a variety of other social motives, such as death-denial and the

need for consistency. Like the MMM, uncertainty management theories posit that fluid compensation occurs when people experience uncertainty, leading to more extreme judgments in domains unrelated to the initial uncertainty.

Van den Bos & Miedema (2001) argue that the need for certainty lies at the root of the need for justice. Justice relieves uncertainty about the future – a just world is a predictable world -- therefore, uncertainty increases the need for justice. In support of this view, research has shown that writing about being uncertain increases affective reactions to procedural injustice (e.g., van den Bos, 2001; van den Bos & Miedema; van den Bos, Poorlivet, Maas, Miedema, & van den Ham, 2005). Specifically, thoughts of uncertainty increased reports of anger after imagining a scenario in which a hiring decision is based on only 1 of 9 screening tests used, or when participants were not given a voice regarding the way lottery tickets were distributed between themselves and another participant.

McGregor et al. (2001) posit that people may further manage the threatening nature of uncertainty by shifting toward more extreme attitudes. McGregor (2006) suggested that zealotry often entails turning a defensive avoidance motive into a pro-active approach motive. Rather than directly defending against the uncertain issue or event, one zealously reaffirms some other aspect of self, which provides relief from vigilant concern. McGregor speculated that this occurs because zealous engagement in approach goals “toggle the BIS (behavioral inhibition system) away from anxious rumination and toward approach-motivated resilience,” thereby serving as “a motivational palliative for alleviating preoccupation with threatening information” (McGregor, p. 3).

Consistent with this view, contemplating a difficult personal decision, feeling temporal discontinuity due to imagining what a place where childhood events transpired would be like 30

years from now, and death reminders led to stronger and more certain attitudes on other issues, such as personal projects, communal values, ingroup bias, and judgments of moral transgressors. Thoughts about an uncertain upcoming personal dilemma also led participants to exaggerate their self-concept clarity as assessed by response latencies to me-not-me decisions (McGregor & Marigold, 2003). Other studies have found that East Germans reacted zealously to thoughts of long term unemployment, by exaggerating their preference for East over West Germans and for absolute personal goals over more tentatively framed ones (Jonas, Fritzsche, & Greenberg, 2005).

Epistemic and existential roots of the search for meaning. MMM and uncertainty management theories posit that many threats are motivating because they undermine the stable understanding of the world that is needed for effective action. Given the broad range of threats to meaning and certainty that are encompassed in these theories, they seem to view these threats as fundamentally epistemic in nature. However, Janoff-Bulman and Yopyk (2004) have suggested that the meaning-making process includes both an epistemic causal analysis and a more existential analyses about the deeper personal meaning of events. She argues that to find meaning in major life events, people seek to understand both why the event happened and why it happened to them, rather than others. This raises the question of whether causal analyses to satisfy epistemic motives and more existential analyses of the personal significance of life events reflect the same or distinct needs and processes. We return to the controversies surrounding the motives that underlie the quest for meaning in a later section.

Relating to Other People and Groups

Although human beings are social animals, highly interdependent with each other for virtually all important outcomes in life, we can never fully know or be fully known by another person. We are also cultural animals, who rely on other people, living and dead, for the

meanings we pursue to address our existential concerns. Our views of the world and ourselves depend on *shared* understandings that depend greatly on social validation. Thus, relationships with individuals and affiliations with groups have important existential implications. This section focuses on existential aspects of interpersonal relations. For a more general discussion of relatedness, see Leary (this volume).

Attachment, Fear, Anxiety, and Death

Human beings are born more helpless than any other animal, unable to get even their most basic needs met without the intervention of their caretakers. Indeed, human infants are born with an innate propensity to experience and express distress when these needs are not met. This signals parents or primary caretakers to take action to correct what is wrong and relieve the distress. Integrating the work of Freud, Rank, and other psychodynamic theorists with evolutionary theorizing, John Bowlby (1969/1982) posited that this interplay between infant and primary caregiver is the basis for the development of intense affectional bonds. Bowlby argued that the propensity to form interpersonal attachments is an innate evolved feature of most higher animals that reached its pinnacle in our species as an adaption to the helplessness of the human infant. Subsequent research by Ainsworth (1979) and many others (for a review, see Mikulincer & Shaver, 2003) documented the existence of both an attachment system that operates in all people and individual differences in the way people manage their attachment needs.

Attachment theory alerted psychologists to the importance of affection in protecting infants from distress and ultimately keeping them alive. Initially, distress is quelled by touching, cuddling, and other physical displays of affection. As the infant matures and develops cognitively, the mere physical presence of the attachment figure becomes capable of regulating distress; with further cognitive development, this gives way to internal representations of the

attachment figure, which are activated when comfort is needed. Attachment is essential to development because distress interferes with children's ability to actively engage with the world, which is essential to the unfolding of their biological potential. When distress is quelled, children are emboldened to explore the environment and interact with it. As Ainsworth observed, securely attached children use their caregivers as a safe haven from which to explore the world and develop the skills and knowledge necessary to become autonomous individuals.

From the perspective of attachment theory, children's equanimity is directly linked to the affection and approval their parents' bestow on them. At first, this affection is completely non-contingent – children get love simply for being. With increasing development, though, these security-providing expressions of affection become increasingly contingent on the child's behavior. The parents cannot help displaying pleasure and affection when their child smiles, sits up, walks, talks, mirrors back their cherished beliefs, and accomplishes other things throughout life. Behavior that meets or exceeds the parents' internalized version of cultural values elicit increased displays of affection, but behavior that violates these values provokes disapproval and sometimes anger. As the child develops language and increased cognitive sophistication, more intentional efforts at teaching the ways of the culture are added, in the form of fairy tales, religious and historical teachings, direct instruction regarding proper and improper behavior, and the more abstract concepts of right and wrong.

Through this process, children begin to equate good behavior with parental love and freedom from fear, and bad behavior with parental disapproval and anxiety. Eventually their parents' values and standards are internalized, and the security that is felt when they meet or exceed these standards and the anxiety experienced when they fall short of them become the

basis for regulating their own behavior. Security becomes associated with the sense that one is a good person – which, of course, is the root of the need for self-esteem.

At some point, probably between the age of 3 and 7, children begin to realize that their parents have limitations, that they can't always be there for them, and that there are things from which they cannot protect them. Awareness of death begins to emerge (Yalom, 1980). This signals that a stronger basis of security is needed. Becker (1973) argued that realization of the parents' limitations and the child's own mortality is the impetus that broadens the child's basis of protection, from the parents to other people, the culture in general, and in most cases, an all-powerful deity that will mete out the ultimate reward or punishment. At this point, the child's security depends on perceiving oneself to be a valuable person in a meaningful world, a view that is closely tied to the views of the parents and other people, as it will remain, in varying degrees, throughout life.

Attachment as terror management. Synthesizing these attachment ideas, Becker's theorizing, TMT, and their own work on romantic attachment in young adults, Mikulincer, Florian, and Hirschberger (2003) proposed that interpersonal attachments are an additional component of the anxiety-buffering system that protects people from existential anxiety, intimately related to, but distinct from, the cultural worldview and self-esteem components initially posited by TMT. A broad range of evidence is consistent with these ideas. Specifically, research has shown that reminders of death increase people's willingness to initiate social interactions and confidence in their interpersonal abilities and decrease their sensitivity to rejection (Taubman Ben-Ari, Florian, & Mikulincer, 2002). In addition, MS increases the desire for intimacy and willingness to commit to romantic relationships (Taubman Ben-Ari et al.). MS also has been shown to increase people's endorsement of the "eros" (romantic, passionate) and

“agape” (selfless, altruistic) love styles and attraction to prospective romantic partners who exhibit these styles, which are associated with higher levels of romantic satisfaction (Mikulincer et al, 2003). Other studies have shown that thoughts of problems in a romantic relationship or a long-term but not short-term separation from a romantic partner increases the accessibility of death-related thoughts, and that writing about one’s romantic commitment eliminates the effects of MS on other forms of worldview defense (Mikulincer, Florian, Birnbaum, & Malishkovitz, 2002).

Further support for linking attachment and terror management processes comes from studies showing that individual differences in attachment style predict how people respond to existential threats. Securely attached persons report less fear of death than insecurely attached persons (Mikulincer, Florian, & Tolmacz, 1990), and attachment security is associated with a greater sense of relationship permanence (Florian & Mikulincer, 1998). Whereas insecurely attached people respond to MS with harsher judgments of moral transgressors, securely attached persons do not (Mikulincer & Florian, 2000). Instead, securely attached persons responded to MS with increased desire for intimacy in romantic relationships, while insecurely attached persons did not. These findings suggest that attachment style is one determinant of the various possible sources of protection a person turns to when faced with threat. Taken as a whole, this line of research suggests that romantic relationships provide emotional security in general and protection from existential fears in particular, and that this is likely one reason that people are so strongly drawn to them.

Unfortunately, very little research has been done on the development of terror management processes in children, no doubt due to the ethical and practical difficulties of studying reactions to death in children. The one published study of which we are aware showed

that although 7 year old children responded to reminders of death with more negative evaluations of both ingroup and outgroup members, 11 year olds showed the typical MS-enhanced ingroup bias found in adults (Florian & Mikulincer, 1997). These findings suggest that by the age of 7, children are bothered by thoughts of death, as evidenced by their general increase in negativity; by age 11, they seem to have adopted the typical adult terror management pattern of worldview defense, suggesting that they are using their cultural identity to ward off death concerns. Clearly, more research on the development of these processes in children is needed.

Young adults may continue to use their parents, along with other close relationships, to cope with existential fear. Indeed, one series of studies (Cox et al., 2008) showed that having young adults visualize a positive interaction with a parent eliminated the effect of MS on worldview defense and death thought accessibility. Death reminders also increased the ease of recalling positive interactions with their mothers and the difficulty of recalling negative interactions with her; MS also led to more positive evaluations of a newly met person if she shared characteristics with participants' mothers but not if she did not. As would be expected if secure attachment provides a safe haven for interacting with the world, insecurely attached persons relied more on their parents after reminders of death, whereas securely attached persons relied more on romantic partners. This research suggests that parental attachment continues to play an important role in young adults' coping with death.

One remaining issue for this line of work concerns the extent to which close relationships serve terror management by providing attachment security or by bolstering of the individual's worldview and self-worth. Consistent with the latter function, research (Kosloff & Greenberg, 2009) has shown that MS increases preference for a prospective short-term relationship partner who bolsters self-worth over one who provides more sex. In addition, when contemplating a

possible long-term relationship, MS led participants to prefer a partner who shared their worldview over one who was more physically attractive. These studies show that boosts to self-esteem and worldview confidence are clearly important factors in relationship preferences.

The Social Construction of Reality

In addition to managing anxiety, other people help us find and maintain meaning (Hogg, this volume; Swann & Bossom, this volume). Our first ideas about the world and how it works come from our parents, and are reinforced by the many other people and groups that populate our lives. Other people provide the interpretative frameworks that enable us to abstract meaning from our experiences. By and large, these frameworks are rooted in the culture in which we live, and research has documented intriguing ways in which different cultures promote different meanings (see Heine, this volume). For example, research suggests that whereas people from individualistic culture focus more on the protagonist of behavior, those from collectivistic cultures attend more to the surrounding context (Nisbett, Peng, Choi, & Norenzayan, 2001).

These cultural templates for meaning are communicated to us in many ways, first through interaction with individuals (especially our parents and close others) but also through the myths, historical and religious teachings, and entertainment media of our culture. In support of this claim, studies have shown that brief interactions with others push people to interpret novel experiences in ways similar to their interaction partners (e.g., Sinclair, Huntziner, Skorinko, & Hardin, 2005) and that exposure to media, such as movies, lead people to interpret ambiguous events in line with the perspectives presented in these movies. Thus social interactions, both on a one-on-one basis and in the media give people the concepts they use to interpret our world.

Other people play another important role in the construction of meaning: they can either validate or invalidate our perceptions, ideas, and interpretations. As many theorists have posited

(e.g., Festinger, 1954; Swann, 1987), when other people share our perceptions or beliefs, this implies that we are correct – if everyone else sees it this way, this must be the way it is.

Sometimes people change their behavior or attitudes when a sufficient number of others behave or believe differently because they trust the others more than their own inclinations – the process of informational social influence.

Self-verification research, which is discussed more fully in the identity section, has shown that people actively seek others, including romantic partners, who confirm their self-concept, regardless of whether their self-concept is positive or negative (Swann & Bosson, this volume). However, even people with negative self-concepts need to convince their partners that they possess enough positive characteristics that make it worthwhile for the other to stay in the relationship – otherwise the relationship would dissolve leaving the person without the many benefits that relationships provide (Swann, Chang-Schneider, & Angulo, 2007). From this perspective, initiating and maintaining relationships require a balance of seeking positive and self-verifying feedback, reflecting the conflict between the desires to be liked and to be known.

Shared reality. Shared Reality Theory (Hardin & Higgins, 1996) builds on classic work on the social construction of reality (e.g., Sherif, 1936) and focuses on the dynamic interdependence of epistemic (need to understand) and social (need to connect with others) motives. From this perspective, experienced reality is a social construction that requires consensus from others, especially significant others. At the same time, shared conceptions of reality promote attraction in interpersonal relationships. When one perceives the world in the same ways as others do, this validates and reifies the perception, making communicating with the others both possible and rewarding. Shared perceptions of reality therefore create a powerful social bond between people. On the other hand, encounters with others who do not share one's

reality are unpleasant, as demonstrated in the agitation and discomfort participants in conformity studies feel when others' judgments deviate from their own; these negative emotions lead to avoidance and derogation of those who do not share our reality. Thus rather than separating epistemic and social motives, Shared Reality Theory emphasizes their interplay.

In support of this perspective, research has shown that activation of widely shared social stereotypes lead individuals to ascribe more of these stereotypes to themselves, but only if close others shared those stereotypes and participants believed that these others thought they fit the stereotypes (Sinclair, Hardin & Lowery, 2006). For example, Asian-American women's self-ratings of math ability were higher when their ethnicity was made salient and lower when their gender was made salient; this effect was mediated by participants' perceptions of whether their friends believed they fit these stereotypes. Other research has shown that participants self-stereotypes shifted in the direction of those shared by an interaction partner if the motivation to get along with this person was high but not when it was low (Sinclair et al., 2005). Other research has shown that the greater the perception of shared reality in an interaction, the more people like and feel similar to their interaction partner and feel that the interaction went well. Taken together, this work provides compelling support for the impact of social interactions on how we perceive reality, and for the impact of perceptions of shared reality on attraction to those with whom we interact.

Existential isolation and I-sharing. One of the problems with constructing and validating our reality through social interactions is that we can really never know for sure if the reality we perceive is *really* the same as any other person. Is one's experience of a Picasso painting the same as their friend's? Do men experience blue the same way that women do? There is simply no way of knowing. The closest we can come is to use the words and

expressions of others to infer what they are experiencing. Similarly, we can never know if another person experiences or understands our own experiences; maybe *no one* knows how we really feel! Yalom (1980) referred to this problem as *existential isolation*: At some level, we are aware that our experiences, perceptions, beliefs, and attitudes are private subjective matters that may ultimately bear little resemblance to those of other people, even those with whom we are close, even those who think they understand.

I-sharing theory posits that people cope with existential isolation by seeking shared subjective experiences with others, which promotes especially powerful social bonds (Pinel, Long, Landau, Alexander, & Pyszczynski, 2006). Although people are attracted to others with whom they share objective characteristics, attraction to those who appear to share our subjective experiences is even more powerful. A series of studies demonstrated that sharing subjective experiences (such as laughing at the quirky behavior of another) leads to more attraction than sharing objective characteristics (such as having the same hometown; Pinel et al.). These studies also showed that attraction to objectively similar others is driven, at least in part, by assumptions of shared subjective experience. The appeal of shared subjective experience over objective similarities is greatest for those high in interpersonal dependency and increased when imagining a time when one felt “alone in a crowd” – variables thought to be associated with existential isolation. Research has also shown that I-sharing reduces the tendency to conform in the Asch line-judging paradigm (Pinel, Anson, & Crimin, 2008). Thus sharing subjective experiences increases confidence in our perceptions and thus reduces our need to bring our own perceptions in line with those of others.

Including the other in the self. One solution to the problem of existential isolation is to include important others in the self. Such merger of self and other could be viewed as the

ultimate way to satisfy the urge to return to the secure state of union with one's mother in the prenatal state, posited by Freud and others. Self-expansion theory (Aron and Aron, 1996) maintains that merging one's self with the other is an important component of all close relationships, especially romantic ones. From their perspective, as a relationship deepens, the other is increasingly included as part of the self. Research has shown that people in deeper relationships show a greater tendency to vicariously share in their partners' experiences, more confusion over self- and other-related information in memory tests, and decisions that favor their partner's wishes over their own (e.g., Aron, Paris, & Aron, 1995). Inclusion of other in the self is associated with higher relationship satisfaction, commitment, and self-esteem.

Self-expansion theory posits that the *process* of including the other in the self generates feelings of love toward one's partner. As a relationship develops, people exchange information and share experiences that are integrated into their working models of self and the relationship. This integrative process produces feelings of exhilaration that are experienced as passionate love. This integration of other into self occurs at more rapid rates in the early stages of relationships, thus accounting for more intense feelings of passion early on, which gradually fade as integration slows when the other has become familiar. However, the theory posits that couples who engage in novel, exciting, and self-expanding activities keep this process moving and thus experience higher levels of relationship satisfaction, and research has supported this proposition (Aron, Norman, Aron, McKenna, & Heyman, 2000).

Groups and Social Identity

In addition to close interpersonal relationships, belonging to groups is an essential part of human social life. Based on their review of diverse literatures, Baumeister and Leary (1995) concluded the human beings have an innate need to belong and affiliate with groups, which

evolved due to the survival and mating advantages that group living provided. Although there is general consensus that most people are indeed attracted to groups of various sorts, some have questioned whether positing a global, undifferentiated need to belong helps explain the complex multi-faceted nature of attraction to, repulsion from, and indifference towards groups of various types (cf., Pyszczynski, Greenberg, & Koole, 2004). The initial impetus for our ancestors to congregate in groups was probably indeed the increased reproductive fitness that group living afforded. However, the evolution of sophisticated intellect that led to the emergence of modern humans brought with it additional functions for group affiliation to fulfill. Human history reflects an ongoing series of conflicts and struggles between clans, ethnicities, religions, nations, and larger coalitions. Even within groups, there is plenty of conflict involving individuals and small coalitions. Although competition for scarce resources surely plays an important role in such conflicts, just as it does in many other species, there are also some uniquely human existentially rooted sources of conflict that must be included in any comprehensive account of group-related behavior.

Social exclusion and ostracism. Case and Williams (2004) have suggested that social ostracism is a metaphor for death. In some cases, ostracism might literally lead to death, in that people are highly dependent on others for need fulfillment and safety. Williams and colleagues argue that this contingency between belonging and survival led to the evolution of strong negative affective reactions to ostracism, which motivate people to maintain social bonds. Ostracism undermines satisfaction of diverse needs, including belonging, self-esteem, control, and meaning, making it a particularly aversive state. Studies have shown that being ignored in something as trivial as a ball-toss game can lead to negative emotions, greater attraction to both desirable and undesirable groups, increased conformity, more vigilant processing of social

information, higher scores on implicit measures of prejudice toward outgroups, and more aggression (for a review, see Williams, Case, & Govan, 2003). Other studies have shown that social exclusion can disrupt time perception, lead to a focus on the immediate present, increase belief that life is meaningless, reduce emotional responsiveness, and impair intellectual performance (e.g., Twenge, Catanese, & Baumeister, 2003). Consistent with the idea that group affiliations serve diverse psychological functions, research on ostracism shows that social exclusion can be an intensely aversive state that instigates behavior that expresses distress, aims to re-establish social connections, and interferes with functioning in other domains.

Groups provide identity and self-esteem. As Social Identity Theory (Tajfel & Turner, 1979) maintains, the groups to which we belong are important components of our identity and self-esteem. Consistent with this idea, research shows that people are more likely to identify with successful than unsuccessful sports teams (e.g., Cialdini & Richardson, 1980); this tendency is increased when one's individual self-esteem has recently been threatened. Research has also shown that being part of even relatively meaningless groups can, at least under some conditions, lead to bias in favor of such groups and their members (for a review, see Brewer, 1979). On the other hand, this tendency is much stronger when the groups are meaningful and therefore able to confer a sense of identity and value on its members (e.g., Harmon-Jones et al, 1996). These findings suggest that it is not merely belonging that is important to people, but rather, the shared meaning and value that group membership can provide.

Groups manage existential terror. If group membership provides meaning and self-esteem, which have both been shown to serve terror management functions, it follows that group membership would also be useful when facing existential threats. Research has supported this proposition (Castano & Dechesne, 2005). For instance, Wisman and Koole (2003) found that

reminders of mortality increased the desire to affiliate with others. Death reminders have also been shown to increase Dutch participants' optimism that the Dutch soccer team would beat the German team and University of Arizona students' tendency to dis-identify with their football team after a loss while simultaneously increasing identification with their more successful basketball team (Dechesne, Greenberg, Arndt, & Schimel, 2000).

Other research (Arndt, Greenberg, Schimel, Pyszczynski, & Solomon, 2002) has shown that MS decreased Mexican-American students' ethnic identification after exposure to negative examples of ingroup members. Later studies showed that this tendency for MS to lead to disidentification from ingroups that are depicted negatively is especially likely for those low in need for closure and when the group boundaries are portrayed as permeable or impermanent; MS led to continued clinging to the ingroup among persons high in need for closure and when group membership was portrayed as stable over time (Dechesne, Janssen, & van Knippenberg, 2000). These studies show that thoughts of death increase the use of group memberships to enhance and protect self-esteem.

If a group is to provide meaning, it must be perceived as distinct from other groups and as having entitativity. Indeed, people identify more with groups viewed as high in entitativity (Castano, Yzerbet, & Bourguignon, 2003). Research also has shown that MS increases group identification, perceived entitativity, and maintenance of boundaries with outgroups. For example, reminding Italian students of death led them to view Italians as a more distinctive social group, to identify more with them, and to view them more positively than Germans (Castano, Yzerbyt, Paladino, & Saachi, 2002). In a related vein, MS led Scottish students to judge fewer people who differed from the prototypic appearance of their group as ingroup

members and more people who closely matched the prototypic appearance as ingroup members (Castano, Yzerbyt, Bourguignon, & Seron, 2002).

Inter-group conflict and violence. A large body of research suggests that inter-group bias, conflict, and prejudice is fueled by the protection from existential anxiety that groups provide (for reviews, see Castano & Deschene, 2005; Greenberg et al., 2008). Converging studies have shown that reminders of death increase bias toward real groups such as Jews among Christians, Turks among Germans, Germans among Italians, and Russian immigrants among Israelis. Studies have also shown MS to produce increased pride in things associated with the ingroup, such as the Deutsche Mark and reunification of East and West among Germans, the flag among Americans, and artwork attributed to a Hispanic artist among Mexican-Americans. Other research has shown that reminders of death increase the influence of stereotypes on perceptions and judgments (Schimel et al., 1999).

Research has also shown that reminders of death increase aggression and support of violence toward outgroups. In two studies (McGregor et al., 1998), reminding participants of death led them to give more hot sauce to a person with opposing political views who expressed a clear aversion to spicy foods. Research has also shown that reminders of death or events associated with death, such as terrorist attacks, increased conservative Americans' support for the use of extreme military tactics (including the use of nuclear and chemical weapons) to fight terrorism, Iranians' support for martyrdom attacks against Americans (Pyszczynski et al., 2006), and conservative Israelis belief that violence against Palestinians is justified (Hirschberger & Ein-Dor, 2006). These studies show that the impact of death-related concerns generalize to ongoing real world conflicts and can increase support for killing one's enemies.

Subsequent studies found, however, that increasing hatred and support of violence toward one's enemies is not an inevitable response to existential threat. From the perspective of TMT, people respond to increased threat by clinging to whatever elements of their worldviews, self-image, or close relationships most likely to provide security. Elements of the anxiety-buffering system that are highly associated with security and that are particularly accessible should thus be even more influential when death is salient. Both individual differences and the momentary salience of particular values are important in determining whether support for violence is increased or decreased in response to existential threat.

Research suggests that political conservatives, religious fundamentalists, those who perceive fundamental differences between social groups, and those without direct personal experience with the consequences of war are especially prone to respond to thoughts of death with increased support for violence. Hirshberger, Pyszczynski, and Ein-Dor (in press) have shown that although reminders of death increased Israelis' support for a pre-emptive nuclear strike on Iran when exposed to inflammatory anti-Israel rhetoric from Iranian leaders, it decreased support for such actions when participants were exposed to conciliatory Iranian rhetoric. Research has also shown that priming thoughts of caring interactions with primary caregivers (Weise et al., 2008), compassionate religious values (Rothschild, Abdollahi, & Pyszczynski, 2008), a sense of common humanity and shared global catastrophe in the form of global warming can reverse the violence-promoting effects of existential threat such that death reminders reduce support for violence and promote support for peace-making (Motyl, Pyszczynski, Cox, Seidel, & Maxfield, 2007). Thus although death reminders often increase support for war, terrorism, and conflict, this depends on the attitudes of the persons involved and the values and issues that are salient.

The appeal of charismatic leaders. People also minimize existential fear by investing in exalted leaders. Instead of bearing the responsibility for establishing the meaning and value of one's own life, the person merges himself with a revered leader who affirms the meanings, values, and positive identity of the group. Consistent with this analysis, prior to the 2004 Presidential election, reminders of death and the 9/11 terrorist attacks (which increased death thought accessibility) intensified support for President Bush, a political leader who portrayed himself as spearheading a divinely-sponsored crusade to triumph over evil (Landau et al., 2004b). Other studies have shown that reminders of death increase the appeal of a charismatic leader who exalts the ingroup over a more competent task-oriented leader who is preferred under less threatening conditions (Cohen, Solomon, Maxfield, Pyszczynski, & Greenberg, 2004). More recent research has shown that leaders who both share one's ideology and glorify the ingroup are especially appealing to people reminded of their mortality (Kosloff, Greenberg, Weise, Solomon, & Pyszczynski, 2009).

Existential dilemmas created by group membership. Despite the many values of belonging to a social group, group membership is not without costs. One of these problems involves the tension between belongingness and uniqueness. Building on the earlier theorizing of Rank (1932), Becker referred to fitting in and standing out as the *twin ontological motives*. Although cultures vary in the extent to which each is valued, both appear to be universal human motives that appear in all cultures (Markus & Kitayama, 1991). Research has shown that after being labeled a deviant, MS increases perceptions of their similarity to most people, whereas after being labeled a conformist, MS decreases perceptions of similarity to others (Simon et al, 1997). Brewer's (1991) work on optimal distinctiveness shows that these twin motives play a role even at the level of people's group identifications. This conflict between fitting in and

standing out is an important existential conflict that arises from the competing needs for individual and collective identity and self-esteem.

Another class of problems relates to threats to social identity. Members of low status groups must contend with the threat of being devalued and discriminated against by members of higher status groups. When people realize that they are targets of negative stereotypes, this may activate a sense of “stereotype threat” (Steele & Aronson, 1995), an implicit feeling of threat that can undermine performance in stereotype relevant domains. Members of high status groups must often cope with the threat of their group’s history of discriminating against or otherwise harming members of lower status groups, a state known as “collective guilt” (Doosje, Branscombe, Spears, & Manstead, 2006). Low-identified group members are more prone to acknowledge feelings of guilt, presumably because high-identified group members are more motivated to deny negative aspects of their group. Indeed, research suggests that collective guilt only leads to efforts to correct prior wrongdoings to another group when people have received an opportunity for self-affirmation (Harvey & Oswald, 2000). Thus group boundaries create existential dilemmas for both members and outsiders.

Self and Identity

People’s understanding of who they are emerges out of a complex interaction of genetic, social, and cultural influences. The self changes throughout life, and is both one thing and many things. We each have private identities, relational identities, occupational identities, recreational identities, spiritual identities, age, ethnicity, and gender based identities, and other group-based identities. Our identities affect every significant thing we do. This section focuses only on the small proportion of the voluminous literature on self and identity that delves into existential

functions of identity or the impact of existential concerns on identity. For a more general review, see Swann and Bosson (this volume).

In most modern cultures, the range of possible identities is larger than ever before. Compared to earlier eras, identity is much less determined by fixed factors such as social standing, birthplace, or gender (Baumeister, 1987). Instead, TV shows and gossip magazines invite people to relate their own identity to the image of celebrities and superstars of the day. The internet has also altered the modern self, by greatly increasing the number of venues for self-expression, thereby allowing identities that were previously marginalized to flourish. Out of these many influences, people must decide which roles and identities befit them. Ambiguities about self and identity are especially prominent when people shift between social contexts.

Objective Self-Awareness

One of the hallmarks of selfhood is reflexive consciousness, the capacity to become aware of one's own existence. Although certain animals like chimpanzees and dolphins are capable of self-recognition, the capacity to consciously reflect upon the self is far more developed in humans than in any other species (Sedikides & Skowronski, 1997). This capacity for self-awareness has been the subject of theoretical inquiries across the ages, among classic thinkers such as Socrates, Pascal, and Descartes, existential philosophers such as Kierkegaard and Heidegger, and scientists such as James, Cooley, and Mead. The study of self-awareness was changed dramatically by the groundbreaking work of Duval and Wicklund (1972). Their objective self-awareness (OSA) theory posited that just as people can be aware of the existence of environmental stimuli, they also can be aware of their own existence. OSA theory posits that attention to the self leads to an assessment of discrepancies between one's current state and salient standards. This awareness was held to be aversive because it usually confronted people

with the fact that they fall short of their goals and aspirations. OSA theory reasoned that this would motivate people to bring their behavior or identities in line with the salient standards.

Duval and Wicklund were the first to empirically assess the psychological effects of self-awareness. OSA was manipulated by directing people's attention towards some aspect of their selves; one of the most effective ways of doing this was to simply show people their faces in a mirror or video monitors. A large body of research has shown that directing attention toward the self increases conformity to salient standards (for reviews, see Carver, 2003; Silvia & Duval, 2001). For instance, self-focus promotes greater conformity with task instructions (Wicklund & Duval, 1971), stronger congruence between attitudes and behavior (Carver, 1975), and suppression of undesirable stereotypes (Macrae, Bodenhausen, & Milne, 1998). These motivational effects of self-focused attention were integrated into a general theory of self-regulation (Carver & Scheier, 1981), which posits that self-awareness enables people to use the feedback from their behavior to bring them closer to desired end-states.

The existential nature of self-awareness. According to OSA theory the standards against which people compare themselves are provided by the environment or their personal history. However, an existential orientation implies that even such givens can be called into question. Research suggests that self-awareness can sometimes lead people to question the ultimate validity of prevailing norms and standards (Silvia & Duval, 2001). One study showed that, after failing a task, self-focus led people to change performance standards when these standards are salient (Dana, Lalwani, & Duval, 1997). This finding was replicated by Duval & Lawalini (1999), who showed that directing attention to a standard leads people to attribute their performance to this standard. Thus, when people regard their standards as the cause of their failure, self-focus leads them to change the standards rather than their behavior. Studies of moral

decision making have confirmed that self-awareness can produce shifts in moral standards (Batson, Thompson, Seuferling, Whitney, & Strongman, 1999).

These findings indicate that self-awareness may lead people to question some of the basic givens of their current situation, including their beliefs about what is morally right. This implies that self-awareness is not concerned only with promoting conformity to whatever standard is salient. Rather, self-awareness can lead people to ask much broader questions about the validity of the values they pursue. In this way, self-awareness has the potential to encourage a more autonomous approach to life.

Self-awareness can remind people of their mortality by instigating dialectic thinking (Silvia, 2001). If constructs include a concept and its opposite, then focusing on one aspect should increase awareness of the opposite. Focusing on the existing self should thus lead to the recognition that the self also could not exist. In line with this reasoning, Silvia showed that self-awareness increases the accessibility of both life- and death-related thoughts. This is consistent with TMT's notion that self-awareness is a basic prerequisite for awareness of one's mortality.

Escaping the self. Given that self-awareness can lead to a confrontation with personal shortcomings and existential quandaries, people sometimes are motivated to avoid self-aware states. Avoidance of self-awareness occurs primarily when people believe they are unlikely to reduce the discrepancy between their current state and the applicable standard (Duval, Duval, & Mulilis, 1992). In a related vein, psychological confrontation with existential problems such as death or social isolation has been found to lead to avoidance of self-awareness (Arndt, Greenberg, Simon, Pyszczynski, & Solomon, 1998; Twenge et al., 2003).

Any activity that reduces the distinctiveness of the self may be used to avoid self-awareness. For instance, people may avoid self-awareness through deindividuation, a temporary

loss of personal identity resulting from enmeshment in a group (Diener, Fraser, Beaman, & Kelem, 1976). Other strategies for reducing self-awareness include alcohol consumption (Hull, 1981), binge eating (Heatherton & Baumeister, 1991), spirituality, masochism (Baumeister, 1988), and even suicide (Baumeister, 1990).

Avoidance of self-awareness may be part of a more general syndrome of cognitive deconstruction, a state that people may use to avoid negative thoughts or acute emotional distress (Baumeister, 1990; Twenge et al., 2003). Cognitive deconstruction is characterized by an orientation towards the immediate present, perception that time drags, and absence of meaningful thought, and lethargy. Research indicates that social exclusion may evoke each of these aspects of cognitive deconstruction (Twenge et al.). It is conceivable that people similarly invoke cognitive deconstruction to deal with other existential problems.

The Importance of Being Worthy

Because the self is an abstract concept that cannot be directly perceived, people's sense of who they are is the product of inferences, involving processes of self-reference, autobiographical memory, mental time travel, and social comparison. However, acquiring ideas about one's nature is not a neutral, disinterested activity. Rather, this process is driven by motivated considerations of which types of self are desirable and which are not.

One of the strongest motives in acquiring self-knowledge is the desire for positive self-esteem. The self-esteem motive has been found to underlie self-related processing across a multitude of different behaviors, including the encoding, remembering, and judging information about the self (Sedikides & Strube, 1997). Moreover, self-esteem motives can explain a host of superficially unrelated social processes, including attitude change, social comparison, stereotype maintenance, and intergroup behavior (Tesser, Crepaz, Beach, Collins, & Cornell, 2000). Indeed,

people seek to attain positive self-esteem even when doing so invokes considerable costs, such as strained interpersonal relationships (Gollwitzer & Wicklund, 1985), interference with goal attainment (e.g., Berglas and Jones, 1978), increased chances of depression (Crocker & Wolfe, 2001), and reduced physical health (Taubman Ben-Ari, Florian, & Mikulincer, 1999).

It is not high self-esteem itself that is problematic. Indeed, having a secure sense of high self-esteem is generally associated with positive outcomes (Kernis, 2003). However, when people's self-esteem is insecure or threatened, they struggle to defend or reaffirm it and these attempts may come at the expense of more basic psychological needs (Brown & Ryan, 2003). "The problem with self-esteem is not in *having* self-esteem but rather in *pursuing* self-esteem to the exclusion of other goals and needs" (Crocker & Park, 2003, p. 304). Paradoxically, then, the *pursuit* of self-esteem, which is typically associated with good psychological adjustment, may eventually undermine optimal functioning.

Death and self-esteem. TMT posits that a positive identity within the context of one's worldview helps manage existential terror. In support of this view, research has shown that self-esteem buffers anxiety and reduces defensive reactions and death-thought accessibility in response to MS (for a review, see Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). In addition, studies have shown that people react to MS with increased efforts to bolster and protect their self-esteem (see Greenberg et al., 2008). Most of these studies show that reminders of death increase efforts to live up to the standards of value from which self-esteem is derived, for instance, bold driving behavior, charitable donations, displays of physical strength, and improving one's appearance..

In some situations, pursuing self-esteem entails the risk of self-esteem damaging failure. Research has shown that high but not low self-esteem individuals respond to MS by pursuing

opportunities for excellence despite substantial risk of failure (Landau & Greenberg, 2006); presumably these individuals possess positive self-views capable of coping with potential failure. In one study ostensibly designed to assess creative intelligence, participants were free to choose which creativity test they would complete and receive feedback on; the test forms offered varying degrees of opportunity to assess one's creativity, with the consequent risk of excelling or failing dismally. High self-esteem participants responded to MS with increased risk, choosing a test that offered greater possibilities of showing one's creativity or lack thereof. In contrast, low self-esteem individuals primed with death became more risk-averse, choosing a test that offered little opportunity to assess their creativity. This suggests that people with low self-esteem manage death concerns by striving to protect rather than enhance their self-worth. Self-esteem bolstering after MS is also blocked when it interferes with sustaining faith in valued representatives of one's cultural worldview (Landau, Greenberg, & Sullivan, in press-a). Four studies showed that MS does not increase self-esteem bolstering when doing so diminishes educational authorities, an admired parent, or an admired iconic leader. This suggests that although a positive identity is generally sought after MS, faith in one's worldview is more fundamental to terror management.

Identity Coherence

A coherent sense of self is critical to effective functioning (cf., Swann, 1987). But given the diverse attitudes, beliefs, values, and goals that people hold, and the variety of ways the same person behaves in different situations and at different times over their lifespan, how do people maintain coherence and self-consistency? People do this at both the micro and macro level. At the micro-level, they are biased toward perceiving consistency among the specific things they believe, say, and do. Cognitive dissonance research documents the impact of the motivation to

maintain a coherent sense of self, driving people to increase consistency between specific beliefs and actions. Research showing that MS increases dissonance reduction in response to worldview-relevant inconsistencies suggests that this micro-level consistency contributes to terror management (e.g., Jonas, Greenberg, & Frey, 2003).

However macro-level consistency is probably even more important for quelling existential concerns. People try to maintain a consistent sense of who they are, with clear traits and group identities, and a sense that past experiences, the present self, and possible future selves form a coherent story. Although people do change, they want to believe there is a core self with stable attributes and values. In fact, longitudinal research tracking people's personalities from childhood to adulthood finds considerable consistency over time, suggesting that such a core self does in fact exist (Caspi, Roberts, & Shiner, 2005). Work on self-verification and self-narratives has focused on the existential functions of maintaining a coherent identity at the macro-level.

Self-Verification. Self-verification theory proposes that people are motivated to maintain stable self-views as a major source of psychological coherence (Swann, 1987; Swann & Bosson, this volume). The existential significance of having a coherent self was recognized by Swann, Rentfrow, & Guinn (2003, p. 368), who wrote, "People's self-views represent the lens through which they perceive reality, lending meaning to all experience. Should people's self-views flounder, they will no longer have a secure basis for understanding and responding to the world because they will have been stripped of their fundamental means of knowing the world."

According to self-verification theory, the social environment plays a vital role in the maintenance of stable self-views. When others confirm one's self-views, this bolsters certainty of one's identity. By contrast, when others disconfirm one's self-views, people "will suffer the severe anarchy that occurs when people realize that their very existence is threatened" (Swann et

al., 2003, p. 376). There is much evidence that people engage in biased information processing and adopt social interaction strategies that confirm their views of themselves (for reviews, see Swann et al.; Swann & Bosson, this volume). For instance, people pay more attention to social feedback when they expect it will confirm rather than disconfirm their self-views (Swann & Read, 1981) and seek out self-verifying interaction partners (e.g., Hixon & Swann, 1993).

Although self-verification has sometimes been regarded as a theoretical rival to self-esteem motives, consensus is emerging that both are important to the construction of self and identity (Sedikides & Strube, 1997; Swann et al., 2003). For a discussion of the unique conditions that arouse each motives and how they interact, see Swann and Bosson (this volume).

Self-Narratives. A number of theorists (e.g., McAdams, 2001) have posited that people are motivated to integrate diverse experiences across time into unified and temporally continuous self-narratives with overarching pattern and purpose. These self-narratives explain to both ourselves and others how the person we were in the past became the person of today, and what path our lives will take in the future. In our self-narrative, each of us is the protagonist in a continuously unfolding drama of life, complete with characters, settings, plot, motivation, conflicts, and their resolutions: *This is what I was, how I've come to be, who I am, and what I am becoming.* In constructing self-narratives we edit out certain scenes from our experience and piece the rest together in a way that seems coherent but may not be accurate. To create these narratives people write journals and autobiographies, amass trivia and souvenirs of their experiences, track their genealogy, struggle to make sense of painful or unresolved memories, and plan their short-term and long-term futures. As Graham Swift put it in his novel *Waterland* (1983), "Man is a storytelling animal. Wherever he goes he wants to leave behind not a chaotic

wake, not an empty space, but the comforting marker-buoys and trail-signs of stories. He has to go on telling stories.... As long as there's a story, it's all right."

But why do people need a narrative understanding of themselves over time? For one, a clear self-narrative provides a basis for effective action, helping us gauge what we should and should not attempt and what future challenges and obstacles might arise. But making sense of experience does more than facilitate action – it also provides psychological security by helping people view themselves as valuable individuals living meaningful, coherent, and lasting lives. Consistent with this view, McAdams (2001) found that people tell two distinct types of autobiographical stories. Those not doing well in their lives tell “woe is me” contamination stories in which their lives were going along swimmingly before disaster struck, such as a loved one dying which led them to spiral into alcoholism or other drug addiction. Most people, however, tell redemption stories in which tough times and struggles lead to a much better life

Evidence for the value of a coherent narrative of one’s past was provided by Smyth, True, and Sotelo (2001). Participants were randomly assigned to write about a neutral control topic, a detailed narrative about their response to a traumatic event, or a fragmented list describing their response to a trauma. Previous work has shown that expressive writing about one’s traumatic experiences leads to health benefits (see Slatcher & Pennebaker, 2006, for a review). These health benefits of expressive writing were replicated by Smyth et al., but only among participants who wrote a coherent narrative about the trauma.

Self-narratives that provide a coherent organization of personal experience over time can also serve a terror management function (Landau, Greenberg, & Solomon, 2008). Without a higher-level structure within which elements of our personal history can be integrated, people are left with the disturbing view of life as an ephemeral, chaotic succession of isolated moments,

each never to be repeated and soon to be forgotten. For example, an author's activities could be viewed as pointless pecking at a keyboard by a creature that is now one hour closer to death; but authors are more likely to view their activity as meaningfully advancing human knowledge. This fits the person into a coherent narrative that gives meaning and significance to life.

Research has recently tested this analysis by examining the impact of MS on how personal experiences were organized over time (Landau, Greenberg, Sullivan, Routledge, & Arndt, in press). In one study, high and low personal need for structure participants generated autobiographical memories from various times in their lives, contemplated either their own death or a control topic, and then indicated which remembered experiences had a significant influence on how they see themselves today. As predicted, high, but not low, structure-seeking participants responded to MS by drawing more meaningful connections between past events and their current selves. Another study (Landau, Greenberg, & Sullivan, in press-b) showed that MS combined with a threat to the coherence of past events to prompt compensatory claims of the past's overall meaningfulness. People connect their present self with a coherent past and an extended future, in part, because coherent self narratives help them cope with their mortality.

The Importance of Being Authentic

Existentialist writings often extol people to become more authentic and true to their own nature. Kierkegaard observed that cultural institutions tend to produce "pseudo-individuals", whose lives are dictated by external norms and dogmatic beliefs. To remedy this problem, Kierkegaard urged people to take responsibility for their choices, so that they could become more than culturally established identities. Similar ideas can be found among thinkers such as Nietzsche, Heidegger, and Sartre, and are echoed in the work of humanists (Rogers, 1951), existential psychotherapists (Yalom, 1980) and many XXP researchers (Kasser & Sheldon, 2004;

Kernis & Goldman, 2005). Although some critics have decried the notion of authenticity as unscientific because it raises the specter of a homunculus (little man in the head) who determines behavior and is not subject to influence himself, contemporary analyses avoid this circularity by specifying processes that lead to authentic functioning (e.g., Kuhl & Kazén, 1994; Ryan, 1995).

One important step towards a process-oriented understanding of authenticity is to situate the self within the larger context of personality functioning (Kuhl, 2000; Mischel & Morf, 2003). In these approaches, the self is conceived as a cognitive-affective-action system that interacts with other personality systems, such as the person's basic needs, emotional preferences, and implicit motives. Self-concepts that acknowledge one's basic needs, emotions, and implicit motives, ground the self in deeper levels of personality functioning, and thus produce more self-determined behavior. Research based on the self-concordance model of healthy goal striving (Sheldon & Kasser, 1995) documents the value of pursuing goals that serve one's authentic self. Specifically, when people pursue goals they really believe in and goals that serve core human needs for autonomy, relatedness and competence, they experienced more success, happiness, vitality, creativity, and life satisfaction. In addition, studies show that the more traits that refer to who a person really is are accessible, the more meaning in life people report (Schlegel, Hicks, Arndt, & King (in press).

Another potential objection to the notion of an authentic self is that authenticity seems to imply that some essence of the self exists on its own, outside of any social influence. However, the existential perspective has never denied the importance of the social context in shaping the self. For instance, Carl Rogers' (1951) pioneering work highlighted the importance of unconditional acceptance from significant others in helping people realize to their true selves.

Most existential thinkers argue that people are (at least, in principle) capable of going beyond social conventions in creating an authentic self. Through processes of transformation or even transcendence, people can assume their responsibility towards others and to be themselves (Kernis & Goldman, 2005). From the perspective of self-determination theory (SDT; Ryan & Deci, 2000) the line between social influence and the authentic self is permeable in that social influences can be internalized into the person's core self. If the internalization process is incomplete, people comply with social norms because they feel pressured or guilty. With complete internalization, however, social norms become fully integrated into the self, such that they comply with social norms out of their own volition.

Recent studies have investigated the impact of the social context for authentic functioning. For instance, one series of studies showed that people become less defensive when others provide them with positive feedback concerning their core, intrinsic self-aspects) but not on extrinsic self-aspects such as achievements (Schimel, Arndt, Pyszczynski, & Greenberg, 2001). Other experiments have shown that people more fully internalize goals when others acknowledge their feelings, provide a meaningful rationale for tasks, and convey choice (Deci, Eghrari, Patrick, & Leone, 1994; Sheldon, Kasser, Smith, & Share, 2002). This work supports the view that the social environment plays a vital role in promoting authentic functioning.

Mindfulness research, which we discuss in the section on freedom, also has important implications for the study of authenticity and alienation. For instance, state and trait mindfulness are associated with more experienced autonomy in everyday life (Brown & Ryan, 2003). Moreover, both trait and state mindfulness are associated with greater congruence between explicit, self-reported and implicit, indirectly assessed, self-esteem (Koole, Govurun, & Chang, 2008). It appears that mindfulness may promote more integrated functioning of the self.

Alienation. The mirror image of authentic being is alienation, a state in which people are unable to access or express their true selves. Karl Marx (1844) viewed alienation as an inevitable outcome of capitalist society, because capitalism separates workers from the products they produce, robbing their work of meaning. Though capitalism may indeed contribute to alienation (Kasser & Ryan, 1993), most existentialists view alienation as a universal aspect of the human condition. In the existentialist novel, *The Stranger* (Camus, 1942/1989), the main protagonist Meursault displays an alienated indifference to what would to most people be profoundly emotional events, like the death of his mother or shooting another man. This implies that even the meaning of such dramatic and unequivocal events is determined by the individual's frame of mind, which can be disconnected from even the most basic and natural human tendencies.

An experimental approach to the psychology of alienation was introduced by Kuhl and Beckmann (1994). These researchers distinguished between two forms of alienation. *Manifest alienation* occurs when people are aware of their authentic preferences, but kept from acting on them. By contrast, in *latent alienation* people lack awareness their true feelings, so these feelings cannot be used to guide actions. In latent alienation, people may not consciously experience any conflict, but still end up pursuing goals that provide little or no satisfaction. Kuhl and Beckmann reasoned that alienation is most likely when self-regulatory functions are impaired. Consistent with this reasoning, research shows that people are most likely to display manifest alienation (as indicated by persisting with a boring activity) after initially performing a monotonous task, which presumably induces a set towards automatic rather than self-regulated behavior. Manifest alienation was greatest among individuals who were indecisive and hesitant in approaching everyday problems.

The study of latent alienation, which arguably represents a deeper form of estrangement from the self, was taken up by Kuhl and Kazén (1994). In their self-discrimination paradigm, participants are asked to choose a number of activities to perform from a list. Some of these activities are chosen by participants themselves, whereas others are assigned to them by the experimenter. After a filler task, participants are again presented with the list of activities and asked to indicate which were assigned and which were self-chosen. Latent alienation is indexed by the number of assigned activities that are mistakenly remembered as self-chosen, a tendency also known as *self-infiltration*. Self-infiltration is most pronounced among individuals prone to chronic rumination. Moreover, self-infiltration tendencies among ruminators are stronger for unattractive rather attractive activities (Kazén, Baumann, & Kuhl, 2003) that are performed in negative rather than positive moods (Baumann & Kuhl, 2002). These paradigms provide a promising avenue for further research on alienation.

Freedom and Will

For most of the history of psychology, the will was either ignored or dismissed as a fanciful figment of human imagination that has no place in a scientific analysis of behavior. After all, how can one detect lawful determinants of the behavior of organisms that are able to break free of these determinants whenever they so decide? In sharp contrast, existential philosophers and psychologists insisted that people are both free and ultimately responsible for their behavior, their lives, and the persons they become. As Sartre (1956) put it, “freedom is what is what you do with what’s been done to you.” Existentialists also focused on the factors that undermine a person’s ability to act freely and the costs that freedom entail for both the individual and society. Otto Rank (1936/1945) was one of the early psychologists to extensively focus on the will, observing that “Out of freedom, man creates a prison.” Rank posited that the

will first manifests as a counter-will when the child begins defying parental control, typically learning the word “no” before the word “yes.” He also developed a therapeutic approach based on the will. Recent theoretical and empirical work in XXP contributed to renewed debate over the possibility of freedom and self-determination. This work has examined the role of unconscious processes in behavior that is typically seen as reflecting willful choice, the processes through which people perceive that they have willfully caused an event, the mechanisms involved in the self-regulation of behavior, and the antecedents and consequences of autonomy and self-determination, actual and perceived.

Automaticity and Unconscious Determinants of Behavior

Recent research has documented the many ways that external stimuli affect behaviors that are usually thought of as reflecting willful choice (for a review, see Dijksterhuis, this volume). For example, research has shown a tendency for people to mimic the gestures, movements, facial expressions, and postures of those with whom they are interacting, with no knowledge of this influence (Chartrand & Bargh, 1999). This effect also extends to abstract conceptual representations of groups. Studies have shown that priming the college professor stereotype leads people to score higher on a test of general knowledge (Dijksterhuis & van Knippenberg, 1998) and priming the elderly person stereotype leads people to walk slower and exhibit poorer incidental memory (Bargh, Chen, & Burrows, 1996). Values and goals can also be activated and subsequently influence behavior without the person’s awareness. Priming the goals of achievement or cooperation leads to better performance and more cooperation, respectively, on later tasks (e.g., Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001). Simply inducing people to think about an important person in their lives leads them to behave in accord with the activities and goals they typically pursue with that person (Fitzsimmons & Bargh, 2003). These

and related findings (for a review, see Bargh & Morsella, 2008), led some to speculate that conscious willful processes play a much less important role in human behavior than previously assumed, and perhaps no role at all.

Indeed, the general tenor of social psychological findings over the past 60 years or so has been that situational factors and internal processes of which people show little or no awareness exert diverse and powerful effects on human thought, emotion, and action. As Nisbett and Wilson (1977) suggested, although people are often aware of the products of cognitive processes, they rarely if ever have direct access to the processes themselves. If people are unaware of the influence of so many forces that affect them, both external and intra-psychic, how can they be said to be willfully choosing their actions? And if behavior is so readily influenced by forces outside awareness, why then are people so convinced that they consciously choose their actions?

Perceptions of Freedom and Will

Wegner (2002) argues that perceptions of will are inferences that bear little relation to the actual determinants of behavior. He proposed a theory of apparent mental causation similar to Bem's (1967) self-perception theory in positing that people infer that they willfully chose to act when available information favors such an inference. Specifically, he posits that people perceive willful action when: (1) their thoughts immediately precede the act, (2) their thoughts are consistent with the act, and (3) their thoughts occur exclusive of other potential causes of the act. Research has been generally supportive of this analysis. In one study, participants felt they had more intentional control over stopping a pointer on a computer screen that was actually stopped independent of their actions when they were instructed to do so 1 or 5 sec before the pointer stopped than when instructed to do so 30 sec before or 1 sec after it stopped (Wegner & Wheatley, 1999). Other studies have shown that participants induced to have malevolent

thoughts about another person who later reports having a headache are more likely to believe that the pins they put into a voodoo doll were responsible for the other's pain (Pronin, Wegner, McCarthy, & Rodriguez, 2006). Research has also shown that people perceive less authorship of behavior when they observe another person doing something that might have influenced it (Sparrow & Wegner, 2006). Wegner likened this process of perceiving one as willing one's acts to that of an observer of a magician, who is unable to observe what the magician actually does to produce his feats of magic (Wegner, 2008). From this perspective, freedom is nothing more than an illusion that people invent due to their ignorance of the true causes of their behavior.

Wegner argues that the universal experience of a link between willing and behavior suggests that this illusion must serve some function. He proposes three possibilities: (1) the experience of will is useful because it facilitates taking responsibility for behavior that others might punish one for, and thereby prevents socially unacceptable behavior; (2) self knowledge of action tendencies provided by the experience of will provides knowledge of our behavioral capacities that helps us make better choices of tasks; and (3) "the feeling of will may be a poor indication of true causal responsibility ... the feeling of willing that does arise in an individual for any action that will compel that individual to accept personal responsibility for that action (Wegner, 2008, p. 242)." From this perspective, free will is an illusion that evolved because it is useful.

In Defense of the Will

In contrast, other theorists have argued that the will is much more than an illusion and that it serves essential functions (e.g., Baumeister, 2008; Ryan & Deci, 2006). While agreeing that external and unconscious forces influence behavior and that people are often unaware of these forces, they argue that this does not imply that these are the only forces that determine

behavior nor that people are always mistaken about making willful decisions. They further argue that willful action need not always imply conscious decision-making. Willful acts serve the individual's personal motives, values, and attitudes. Consistent with this idea, Cesario, Plak, and Higgins (2006) showed that some of the most widely cited ideomotor effects taken as evidence of automaticity are determined by the individual's personal attitudes toward the primed concepts. For example, people with positive attitudes toward the elderly walk slower when primed with elderly-related concepts, whereas those with negative attitudes walk faster when exposed to the same primes. The viability of unconscious will is strengthened further by growing evidence that the unconscious is capable of complex inferences taking multiple factors into account (e.g., Tamir, Robinson, Close, Martin, & Whitaker, 2004). Consistent with these findings, creative scientists and artists often report that after a period of conscious consideration of a problem, they stop thinking about it and later, after what has been labeled an incubation period, a fruitful idea suddenly pops into their heads in a context that is irrelevant to the problem or its solution (see e.g., Csikszentmihalyi, 1996).

These theorists argue that determinism and free will are not mutually exclusive and that psychology would be better served by attempts to explain the processes through which willful self-regulation and autonomous self-determined action emerge than by arguing over whether behavior is free or determined. Modern advocates of the will explicitly reject the idea, promoted by Hobbes, Locke, Skinner, and more recently, Bandura (1989), that willful behavior is "completely independent" of environmental forces or uncaused by external events and internal neurological and psychological processes. Although such a definition of free will would indeed place the concept outside the realm of science, existential conceptions of free will acknowledge external influences. These theorists also eschew the reductionist argument that if neurological

bases for behavior can be found, this renders explanations at more psychological levels of analysis unnecessary, redundant, or less scientific. For example, Ryan, Kuhl, and Deci (1997), three prominent proponents of the importance of willful self-determination, acknowledge that autonomous exertion of will requires a brain, a nervous system, a body, and an environment that poses challenges and opportunities for behaving. Recent research, such as studies documenting the role of glucose metabolism in self-control (e.g., Galliot et al, 2007), has increased understanding of biological processes that underlie voluntary behavior. Human behavior, like all other natural phenomena, can be explained at many levels of abstraction. The will refers to the processes that integrate and coordinate human behavior at the highest level of abstraction.

The capacity to make relatively free choices and exert one's will is conceptualized as an evolved adaptation that follows the principles of natural selections (cf., Becker, 1969; Dennett, 2003; Pyszczynski, Greenberg, & Solomon, 1997). Although increasingly sophisticated intellectual capacities are adaptive for many reasons, especially important among these is the flexibility of behavior that they provide. The capacities to delay behavior to ponder likely consequences, organize goals hierarchically, and reflect on the fit between one's behavior and goals at varying levels of abstraction (along with the many other cognitive capacities involved in self-regulation), made it possible for our ancestors to maximize their outcomes, likelihood of survival and reproduction, and ultimately, the success of their genes. A flexible organism that can moderate its responses to immediate external incentives and internal impulses, is a more adaptable organism. Baumeister (2005) argued that natural selection also favored our ancestors who were best able to meet the complex situational and linguistic demands of culture. Thus rather than being inconsistent with evolutionary theorizing, a substitute for incomplete knowledge of causal processes, or in any sense "unnatural," a capacity for willful self-regulation

of behavior is viewed as an evolved capacity that builds on the self-regulatory mechanisms of less intelligent species but provides humans with a unique form of self-control.

An existential perspective does not view human freedom as a constant. Rather, freedom is a *potential* that is inherent in the human condition but varies with circumstances, life history, and the many factors that influence the development and functioning of the self-regulatory system. Even existential philosophers such as Sartre and Nietzsche, who championed the role of freedom in human affairs, did so, in part, to encourage people to rebel against the many forces that rob them of their autonomy. From this perspective, the question is: What endogenous and exogenous processes increase and decrease one's ability to act freely?

Self-Determination Theory

Self-Determination Theory (SDT, Deci & Ryan, 1980) goes beyond arguing that the *perception* of autonomy is important (Wortman, 1976) to explore the factors that increase and decrease actual autonomous self-control of human behavior. SDT views behavior as autonomous when the individual assents to the behavior "at the highest level of self-reflection," that is, when the person assents to it, and on further self-reflection, assents to that assent. Thus SDT argues that despite the influence of external stimuli such as a stop sign or countervailing internal forces such as hunger, the behavior of stopping in front of it is autonomous if the person concurs with the value of following the rules of the road. Behavior is also autonomous when it responds to unconscious motives, activated by either internal or external events outside of conscious awareness, if it reflects the person's values. On the other hand, behavior that is engaged in the absence of external pressure can be non-autonomous or controlled if it deviates from such internalized standards and is driven by fear, obligation, or the desire for self-esteem or approval.

SDT views the self as an active process of creatively integrating new information and experiences with existing schemas, which functions best when core human needs are met. This enables these integrative processes to produce a maximally autonomous self-determined person. From this perspective, self-determination, optimal functioning and performance, and maximal subjective well-being are produced when innate human needs for *relatedness*, *competence*, and *autonomy* are met. Having satisfying close interpersonal relationships, being able to behave competently in diverse situations, and assenting to one's thoughts, feelings, and behavior as one's own lead to a more open and creative engagement with life. This makes it possible for one to integrate new experiences and information into the self in a more flexible and less defensive way, leading to an authentic self (Kernis & Goldman, 2005). This leads to better functioning, especially on demanding tasks, greater satisfaction with life, and greater well-being.

Benefits of autonomy. Research has supported a wide range of hypotheses derived from SDT (for a review, see Ryan & Deci, 2001). For example, more than 120 experiments have shown that providing people with monetary incentives reduces their intrinsic motivation for performing a given task, as indicated by their voluntary engagement in and evaluation of the task (for a review and meta-analysis, see Deci, Koestner, & Ryan, 1999). Rewards produce this undermining effect because they can lead people to feel as "pawns", whose autonomy is compromised by external pressures. A substantial body of evidence examining people in many walks of life has shown that people who feel their actions are autonomous rather than controlled perform better and more creatively, and are happier and more satisfied with their lives. In a related vein, Langer and Rodin (1976) demonstrated that giving older nursing home residents a sense of enhanced control over their lives led to improved well-being and increased longevity.

Benefits of believing in free will. Other research has focused on the effects of *believing* in free will on a more general, philosophical level. Vohs and Schooler (2008) showed that reducing belief in free will by having participants read passages by a respected scientist arguing that free will is an illusion led to more cheating on tests. Baumeister, Mascicampo, and DeWall (in press) found that discouraging belief in free will increased aggressiveness and decreased helpfulness. Thus belief in free will serves a useful prosocial function.

Self-Regulatory Processes: Beyond the Homunculus

Although they vary in many ways (for overviews, see Bandura, 1989; Baumeister & Vohs, 2003; Carver & Scheier, 1981; Kuhl, 2000), theories of self-regulation attempt to explain the workings of the will by specifying psychological mechanisms through which the self exerts control over thoughts, emotions, and actions. A thorough discussion of theory and research on human self-regulation would go far beyond the scope of this chapter, so here we focus on aspects of this process of particular relevance to the existential problem of freedom. Self-reflective thought, which we argued is the prerequisite for all existential concerns, plays an integral role in the process of self-regulation, which provides more willful and flexible control over behavior.

The depletion of self-regulatory resources. Baumeister and colleagues have argued that self-regulation, which could be viewed as the exertion of will (“willpower”), requires energy to function, and that this energy is a limited resource that is depleted by engaging in effortful control over one’s behavior (e.g., Baumeister & Vohs, 2003). Consistent with these ideas, research has shown that exerting self-control on a wide variety of tasks interferes with later self-control efforts. For example, Baumeister, Bratslavsky, Muraven, and Tice (1998) found that participants who were asked to control their emotions while watching either a funny or sad film were subsequently able to solve fewer anagrams than participants who watched either film

without controlling their emotions; similarly, suppressing thoughts of a white bear reduced participants ability to control their laughter while watching a funny film. Of particular relevance to the self-regulatory processes involved in free will, Baumeister et al. found that the act of choosing to write an essay that was either pro-attitudinal or counter-attitudinal led to less persistence in tracing lines on an unsolvable puzzle, a task that requires considerable self-control to overcome frustration. Thus like suppressing one's desires and impulses, making choices appears to tax the limited resource required for self-regulation and therefore undermine later self-regulatory effectiveness. This research is consistent with the idea that self-control is a potential that can be undermined, in this case by depletion of the resources that fuel these processes.

Research has shown that the depletion of self-regulatory resources also affects the ability to employ defenses against awareness of death that operate in an unconscious and automatic way. Galliot, Schmeichel, and Baumeister (2006) found that participants with low levels of dispositional self-control reported higher levels of death anxiety and death thought accessibility and that performing ego-depleting self-control tasks, such as suppressing thoughts of white bears or ignoring words presented on a screen, produced a parallel increase in death thought accessibility; presumably the depletion of regulatory resources undermined the usual suppression of such thoughts (Arndt et al, 1997). Another study showed that reminders of death led to poorer task performance on complex but not simple tasks, presumably because the suppression of death-related thoughts that MS produces depletes regulatory resources, which are more needed for complex than simple tasks. These finding suggest that self-regulatory resources are consumed by defensive responses to thoughts of death, a form of self-regulation that presumably occurs outside of conscious awareness. These findings also suggest that in addition to encouraging

worldview defense, the depletion of resources produced by suppressing thoughts of death may make it easier to bias one's thoughts to support one's worldview.

Recent research suggests that the idea that the resource involved in self-regulation and free choice is energy is more than a metaphor. Galliot and Baumeister (2007) reviewed evidence that glucose, which is metabolized to produce energy, plays an important role in self-regulation. The brain uses glucose at a higher rate than other bodies systems, and the pre-frontal cortex, which is generally viewed as playing an especially important role in self-regulation, uses more glucose than other brain regions. Research has linked low levels of glucose to self-control problems across many domains, including attention, emotion regulation, school performance, mental health, substance abuse, aggression, and crime. Studies have shown that engaging in self-control reduces levels of blood glucose, and that the self-regulatory depletion effect can be eliminated by giving depleted participants lemonade spiked with glucose (Galliot et al, 2007). There is also evidence that consuming a glucose drink can eliminate the effect of reminders of death on reduced persistence on a frustrating task; presumably this occurred because glucose replenished the energy that was used to suppress death-related thoughts, which made it easier to resist the temptation to quit the frustrating task. Galliot and Baumeister report an unpublished study showing that glucose replenishment can reduce the impact of death reminders on worldview defense; they argue that the increased energy for self-regulation provided by the glucose made it possible for participants to cope with death reminders in other ways. This general line of research documents the role of both biological processes and existential concerns in the functioning of what is traditionally referred to as will, and shows that biological processes are part of, rather than antithetical, to the operation of willful self-regulation.

Mindfulness. The mindfulness concept originated in the Buddhist tradition of encouraging a “detached awareness” of both internal experience and external events and was introduced to social psychology by Ellen Langer (1989). Brown and Ryan (2003) define mindfulness as “a receptive attention to and awareness of present events and experience.” The goal is to experience things with as little interpretation and involvement of the self and evaluative tendencies as possible. By reducing the impact of egotistic and other psychological forces that, in Brown and Ryan’s view distract one from behaving in accordance with one’s authentic needs and values, such an orientation is thought to promote more objective processing of information and choices that better reflect both one’s own needs and the demands of the situation. Common aspects of mindful states include a clear awareness of one’s inner and outer worlds, a suspension of efforts to categorize, evaluate, or judge ongoing events or experiences, and an orientation towards the present (e.g., Langer & Moldoveanu, 2000).

Research suggests that mindfulness may be useful in coping with existential problems. For instance, one recent study found that mindfulness training improved immune functioning among individuals who had been infected by HIV (Creswell, Meyers, Cole, & Irwin, in press), a predicament that is likely to arouse profound existential concerns. Another study found that individuals high in dispositional mindfulness were less troubled by an experimental induction of social exclusion (Brown, Ryan, Creswell, & Niemiec, 2008).). Notably, a similar induction of social exclusion aroused concerns about meaningful existence in other studies (Case & Williams, 2004). Research also suggests that deploying one’s attention in a mindful manner leads to a more autonomous form of self-regulation, as evidenced by behavior that is more in line with one’s values and making more adaptive choices (cf., Brown, Ryan, & Creswell, 2007).

Research has also focused on how dispositional mindfulness, state mindfulness, and short-term mindfulness inductions relate to various aspects of behavior and well-being. Trait mindfulness has been found to be associated with lower levels of depression, anxiety, neuroticism, dissociation, and negative affect, higher levels of positive affect and satisfaction with life, and higher levels of vitality and self-actualization (e.g., Brown & Ryan, 2003).

Research has also shown that both dispositional and state mindfulness are associated with greater need satisfaction and sense of autonomy in one's behavior (Brown & Ryan, 2003). Recent fMRI studies have shown high dispositional mindfulness to be associated with lower amygdala activation and higher pre-frontal cortex activation in response to threatening visual stimuli. Mindfulness inductions have also been shown to improve regulation of negative emotions. In one study, those receiving a mindfulness induction had less negative affective reactions and maintained greater visual contact with aversive pictures (Arch & Craske, 2006).

Brown et al (2007) suggest that mindfulness may improve self-regulatory functioning by reducing the automatic connection between stimulus and response, thus creating a "mental gap" that enables one's values to overcome habitual tendencies. Dispositional mindfulness has been found to be related to dispositional self-control (e.g., Barnes et al, in press). Lakey, Campbell, Brown, and Goodie (2007) found dispositional mindfulness to be associated with low levels of problem gambling among those who like to gamble, and more objective assessments of risk in laboratory gambling tasks. Wenk-Sormaz (2005) found that a mindfulness induction led to less interference on a Stroop task, suggesting greater control of one's attention and less automatized responding.

Much more needs to be learned about the precise processes involved in the mindful state. This more contemplative, open, and accepting monitoring of one's thoughts may avert the more

typical automatic evaluations of stimuli and self that has been documented in other research (e.g. Bargh, 2000). In a related vein, mindfulness may sever the connection between focusing attention on the self and evaluating how one stands relative to salient standards posited by other theories of self-regulation (cf., Carver & Scheier, 1981; Duval & Wicklund, 1972). Given the automatic nature of these evaluative tendencies, and the central role they play in regulating behavior toward self-defining goals, breaking such powerful tendencies is likely to be difficult to accomplish. But the research on the mindfulness suggests that this mode of attending to the self might be beneficial in many ways, not the least of which may be enabling the individual to take better advantage of the potential for free will and self-determination that existential thinkers have traditionally viewed as the hallmark of a well-lived life.

The Costs of Freedom

Although freedom and choice are highly valued by most psychologists and Western culture in general, existential thinkers have been keenly aware of the costs of freedom. As Heidegger (1927/1982) pointed out, the act of choosing inevitably means that one must forgo that which one rejects. Working within the cognitive dissonance tradition, Brehm (1956) demonstrated that difficult choices produce an unpleasant tension state, which people reduce by increasing their attraction to the chosen alternative and derogating the rejected one. Thus freely choosing often leads to irrational biases in the way we evaluate our options. The dissonance literature suggests that feeling responsible for one's actions produces similar irrational shifts in attitudes and evaluations (cf. Wicklund & Brehm, 1976).

Recent research suggests that as the number of choice options increases, so too does the cost of making one's decision. Cognitive resources can be overloaded by options that are highly similar or that differ in subtle ways. Making choices also makes one responsible for the outcome,

and leaves one open to the experience of guilt and regret. This can make the experience of choice difficult, stressful, and ultimately, demotivating. Consistent with this view, Iyengar and Lepper (2000) demonstrated that people are more likely to purchase gourmet jams or chocolates or to volunteer for optional extra credit exercises in classes when given a choice between 6 alternatives than when given a choice between 24 or 40 alternatives; participants were also more pleased with the products and wrote better essays when given the smaller number of options.

Research also suggests that the impact of choice can depend on one cultural background. Iyengar and Lepper (1999) showed that although Americans generally showed higher levels of motivation and performance when they made their own choices regarding which task to work on, Asians who are rooted in a more collectivist cultural tradition were more motivated and performed better when the choice was made by their mothers or a member of their ingroup. Consistent with Fromm's (1941) idea that people sometimes try "escape from freedom," studies have shown that contemplating a difficult decision can lead athletes to eschew democratic coaches in favor of autocratic ones and to view themselves as less responsible for taking action to remedy broader social problems such as global warming (Vail, Anson, & Pyszczynski, 2007). None of this is to deny the generally salutary effects of freedom and autonomy on psychological functioning and well-being. But, like most good things in life, the benefits of choice have costs that must also be considered.

Does More Regulation Always Mean More Freedom? Dual Modes of Volition

Across diverse conceptualizations, free will has been portrayed in two distinct ways. The will sometimes is portrayed as a psychic authority that forcefully and effortfully controls lower level systems through processes such as inhibition or suppression. This portrait of the will is

found in research on ego depletion (Baumeister & Vohs, 2003), thought suppression (Wegner, 1994), and belief in free will (Vohs & Schooler, 2008). By contrast, other work has portrayed the will as in integrative force that more gently combines and synthesizes the inputs of different subsystems. The latter portrait of the will typifies research on self-determination, mindfulness, and personality systems interactions (PSI) theory (Kuhl, 2000; Kuhl & Koole, 2004).

The relation between these two versions of the will is still subject to debate. Some theorists have assumed that the will is a unitary phenomenon, and thus see little need to distinguish between different types of will. Others have suggested that there are at least two fundamentally different kinds of will. For instance, SDT (Ryan & Deci, 2000) has contrasted self-controlled and autonomous regulation of behavior. Both forms of behavior regulation involve self-regulation in the sense of Carver and Scheier's (1981) cybernetic control processes. However, self-controlled behavior is driven by pressures that, though arising from within the person, are not fully congruent with the person's deeper needs and values. Self-controlled behavior may be driven by feelings of guilt or a sense of obligation. By contrast, autonomous regulation is fully driven by the person's inner needs and values.

In a similar way, PSI theory (Kuhl, 2000) depicts the self-control mode as an "inner dictatorship," and autonomous regulation as an "inner democracy". According to PSI theory, the self-controlled form of volition is characterized by the activation of explicit intentions in working memory, which inhibit spontaneous, more automatic forms of behavior control in a top-down manner. This volitional mode is likely to be highly beneficial when the enactment of intentions requires analytic reasoning, when the intended action is complex (consisting of multiple steps), or when a suitable opportunity for enacting the intention must be found.

Nevertheless, the self-control mode has important shortcomings, because it inherently emphasizes one dominant self-aspect (i.e., a goal, norm, or obligation) at a time, at the expense of other self-aspects. Self-control is therefore ill-suited for addressing problems that involve the whole person, which include the existential dilemmas that are the focus of the present chapter.

According to PSI theory (Kuhl, 2000), autonomous regulation entails activation of extended representations of the person's experiences, motives, needs, and core self-aspects. The entire network of this memory system is referred to as "extension memory". Extension memory is assumed to play a major role in the down-regulation of negative emotions, both through the integration of initially disturbing experiences and through the enhanced accessibility of pre-existing networks of personal meaning. Extension memory is postulated to operate through parallel-distributed processing (PDP; Rumelhart & McClelland, 1986), which can flexibly integrate multiple streams of information without a single central controller. PDP can perform highly sophisticated information processing that is essential for complex self-regulatory functioning. Because consciousness is a sequential process, PSI theory assumes that people can only be aware of portions of the regulatory work that extension memory performs. Extension memory thus guides behavior in a manner that is both implicit and volitional, in the sense of being endorsed by the whole person.

Preliminary findings support the existence of these dual volitional modes. As discussed before, a large number of SDT-inspired studies have documented the functional differences between self-controlled, introjected, versus autonomously regulated, identified or internalized, modes of self-regulation. The advantages of self-control appear to be confined to the specific goals that people are pursuing, whereas the benefits of autonomous regulation are broader, and

extend to the well-being of the whole person. Notably, and in line with PSI theory's notions of extension memory, research has documented the implicit, unconscious nature of both self-controlled and autonomously regulated behavior. For instance, Hodgins, Brown, and Carver (2007) showed that subtly priming the autonomy mode led to reduced defensiveness.

Theories of dual volitional modes offer a promising framework for studying the psychology of freedom and will. At the same time, these conceptualizations challenge traditional notions about free will, which assumed that willful regulation is inherently consciously controlled. From the dual mode perspective, the role of the will may lie more in bridging conscious and unconscious processes than in consciousness per se.

Experimental Existential Psychology Today and into the Future

The themes in XXP resonate with many classic social psychological topics. Indeed, attitudes, values, morality, the impact of the group on the individual, causal attribution, decision-making and choice, cognitive dissonance, and reactance all touch upon the human attempt to find meaning in an ambiguous world and find values to orient one's life around. In this sense, social psychologists have been concerned with existential issues in one way or another all along. However, more often than not, the existential issues that underlie social problems have remained in the background in social-psychological theorizing. If the diverse field of XXP could be reduced to a single message, this message might be that consideration of existential concerns, the human awareness of the basic realities of life and death, adds an important dimension to understanding human social behavior. Thanks to such considerations, XXP has provided new insights into issues that have captured social psychologists' imaginations for over a century.

As a heuristic framework, the present chapter has highlighted the existential concerns of death, meaning, isolation, identity, and freedom. Each of these Big Five existential concerns has not only been the focus of traditional existentialist writings, but has also lately become the center of a large and growing body of experimental work that has systematically tested and confirmed the profound significance of these existential concerns for understanding everyday social behavior. TMT, which has emphasized the importance of death concerns to social psychology, to date represents the most elaborate and empirically established approach in XXP. In a narrow sense, the success of TMT can be gauged by the 400+ experiments that have provided support for hypotheses derived from the theory. However, as one of the first experimental approaches that explicitly identified itself as existential, TMT has had a broader impact. For most of the history of psychology, the mere idea of an experimental existential psychology would have been considered oxymoronic. TMT and its empirical success showed that existential theories could be wedded to experimental research, thereby helping to pave the way for other theories and approaches that share TMT's roots in existential thought. The prominence of TMT in the young field of XXP also meant that alternative approaches have often staked their claims by challenging key tenets of TMT, as one of the more established theoretical approach in XXP.

For instance, MMM and uncertainty management theories contend that death is problematic because it threatens meanings and/or raises uncertainties, rather than anything unique to death itself: If existence ends with death, is there any meaning in life? When will I die? How will it happen? What happens afterwards, to both the deceased and their loved ones? These approaches are essentially epistemic in nature, and they view death as one particularly dramatic epistemological problem. Much of the research generated by the meaning maintenance, uncertainty management, and zealous certainty approaches has been focused on showing that

arousing concerns with uncertainty and meaning can produce effects parallel to those of thoughts of death.

The matter is far from settled, however. From the perspective of TMT, death is a fundamental problem not because of uncertainties surrounding it but rather because it is certain – perhaps the only truly certain thing about life. This certainty and the magnitude of the consequences of death are what make it so terrifying and motivationally significant: the obliteration of one's life and self, the frustration of *all* human motives, the end of all experience. Consistent with this position, many studies have found very different effects when comparing mortality salience and threats of uncertainty or meaninglessness (e.g., Arndt, et al., 1997; Friedman & Arndt, 2005; Landau et al., 2004a; Landau et al., 2006; Martens, Greenberg, Schimel, & Landau, 2004; Routledge, Arndt, & Goldenberg, 2004). And thoughts of uncertainty and threats to meaning arouse death-related thought. Specifically, threats of creatureliness, belief in a just world, relationship security, and faith in one's worldview all have been shown to increase death thought accessibility (e.g., Chaudary, Tison, & Solomon, 2002; Hirschberger, 2006; Landau, et al., 2004a; Mikulincer, et al., 2003). Other studies have shown that worldview and self-esteem threats increase the accessibility of death-related thoughts but not negative thoughts associated with uncertainty (e.g., Schimel, Hayes, Williams, & Zahrig, 2007). And finally, as noted earlier, thoughts of death have very different effects when in focal attention than when highly accessible but not in focal attention. It is unclear how MMM and uncertainty accounts could explain the distinct effects of conscious thoughts of death and heightened accessibility of such thoughts outside of focal attention. Enhanced understanding of the relationship between death, meaning, uncertainty, and other existential concerns will likely be an important issue in future XXP research.

XXP is a diverse and growing field which has and will likely continue to benefit from differences of opinions regarding how its fundamental components relate to each other. At the same time, reconciliation and integration of divergent perspectives is also likely to provide additional advances in understanding. The view adopted in the present chapter is that people are faced with multiple existential concerns. Thus, different existential concerns, such as death and meaning, are each important and do not need to be regarded as theoretical rivals. Although TMT has always maintained that awareness of death plays an important role in diverse forms of behavior because it creates the need for specific types of meanings to be attached to one's world and one's self, it has never claimed that death awareness is the *only* motivational force affecting human behavior – or that meaning and certainty is sought *only* in the service of death denial. Clearly, there are other important functions of meaning and certainty. Meanings provide essential guides to action, that enable people to meet their needs, get what they desire, and avoid what they dislike and fear. Similarly, uncertainty often impedes one from moving forward in one's life, planning actions, meeting needs, pursuing goals, and coping with challenges. As many classic social psychological theorists have argued (e.g., Festinger, 1954, 1957; Heider, 1958), the pursuit of clear and confident meaning is essential for the effective pursuit of both concrete and abstract goals.

An important objective for future theory and research on the pursuit of meaning and certainty is to more clearly explicate the relationship between the pragmatic and existential uses of meaning – finding where the epistemic ends and the existential begins, and most importantly, how they interact. More generally, it will be important to understand how each of the Big Five of death, meaning, isolation, identity, and freedom interact with each other. The research reviewed in the present chapter has made it clear that these five concerns interact with each other in

myriad ways, and there are other existential concerns worth considering as well. Instead of attempting to reduce one or more of these five concerns to a specific case of another, more fruit will probably be borne by focusing on understanding the causes and consequences of each of these concerns along with their interplay.

Aside from sorting out the complex relations among the existential concerns, there are many other issues for future XXP research to consider. Although XXP has only recently emerged as a sub-discipline of social psychology, we believe considerable progress has been made. But we are still just at the beginning of exploring the rich and challenging questions that arise when one considers how people are affected by their awareness of these basic facts of life.

Thus far, most social psychological research on the problem of death has been focused on how people avoid confrontation with this troubling problem. However, D. Kuhl (2002) has argued that a direct confrontation with death can serve as a “roar of awakening,” that shakes people out of old routines and opens them up to new possibilities. Studies of near death experiences, confrontation with impending death from terminal disease and aging, and post-traumatic growth suggest similar possibilities. This research documents both individual differences in how people cope when death is imminent and the emergence of a more transcendent accepting attitude toward death among some people (for a review, see Janoff-Bulman & Yopyk, 2004).

Recent research supports the idea that depending on the context and extent of death contemplation, death-related thoughts can lead to more constructive coping responses such as growth, generosity, open-mindedness, and acceptance of others (e.g., Cozzolino, Staples, Meyers, & Samboceti, 2004; Lykins, Segerstrom, Averill, Evans, & Kemeny, 2007; Routledge & Arndt, in press; Routledge, Arndt, & Sheldon, 2004). In a related vein, studies have found that at

least some older persons respond to thoughts of death with a shift toward more lenient judgments of moral transgressors, which may reflect a developmental shift that some but not all people make in their later years because by that time death is closer and harder to deny (Maxfield et al., 2007). These lines of work suggest that exploration of the antecedents and consequences of more open modes of coping with death may be fruitful. Progress toward this goal might be facilitated by greater integration of social psychological research on the effects of thoughts of one's death in the distant future with the broader literature on death and dying, which has explored factors associated with more and less successful coping with death when it is a pressing and immediate personal problem (e.g., Kastenbaum, 2009; Kubler-Ross, 1969).

One of the central problems with *any* system of meaning is that absolute certainty is always elusive and perhaps illusionary. Despite the swaggering confidence that many people exhibit, they can never know for sure that their beliefs are accurate, their values are appropriate, or their attitudes are justified. Much of what was “known” with great certitude 200 years ago is now dismissed as blatantly wrong, and much of what is believed to be true today will likely be similarly scoffed at in the not too distant future. This impossibility of certainty is one of the deepest existential problems with which all people must contend. Does it matter if this inherent uncertainty is acknowledged or not? What makes it possible to tolerate the ambiguity that such acknowledgment entails, and how would an honest acceptance of the impossibility of knowing the truth affect people?

Although many scientifically oriented people scoff at the faith with which some people view the precepts of their religion, how many recognize parallels in the “scientific truths” of which they seem certain? Although the scientific method has proven to be remarkably effective for increasing our understanding of the world, it seems likely that many people accept scientific

knowledge from respected authorities without understanding the logic or evidentiary basis from which these conclusions are derived. In this sense, the faith that many modern people put in science and the pronouncements of scientific authorities is not all that different from the faith that others put in religion and the pronouncements of religious authorities. What are the costs and benefits of subjective certitude in things that one does not understand? Although it is possible to recognize on an intellectual level that all knowledge is uncertain, what does it take to acknowledge this at a deeper experiential level regarding the uncertainty and ambiguity regarding important elements of one's worldview?

Another issue concerns the appeal of uncertainty vs. certainty. People don't always prefer certain knowledge. Would people rather believe there certainly is not an afterlife or that there *might* be one? Would they rather believe they will certainly be forgotten a few years after they die, or that their memory *might* live on indefinitely? Would it be comforting for people to know that they were absolutely certain to die a painful death a year from today, or would they prefer the possibility that they will live a happy and productive life into their 90s and then die painlessly in their sleep?

Death is far from the only domain where people often prefer uncertainty over certainty. Who would prefer to know with certainty they will never succeed in their chosen path in life or find a loving partner, as opposed to holding out hope that they might? Would people rather be certain they are stupid, unattractive, and untalented or remain uncertain about these possibilities? Although these are ultimately empirical questions, it seems unlikely, at least to the present authors, that many people would choose certainty over hope in domains such as these. Avoiding diagnostic medical or academic tests, self-handicapping, and gambling are just a few examples of behaviors in which people actively choose uncertainty over certainty. These examples

illustrate the need for greater theoretical elaboration regarding the psychological functions of certainty and meaning and greater specificity regarding the conditions under which people desire certainty and the conditions under which they prefer uncertainty.

The perspective on human relatedness taken in this chapter emphasized the security, sense of belonging, meaning, identity, self-esteem, and practical benefits that accrue from relationships with other people. Like most theories of interpersonal relationships, this analysis portrays human connections in a rather selfish light, with an emphasis on “what’s in it for me?” This raises the question of whether a truly other-oriented approach to relationships is possible, what facilitates such altruistic connections, and what would such an orientation yield? Contemporary analyses of interpersonal attraction seem to leave the possibility of selfless *love* out of the interpersonal equation. Even the more optimistic self-expansion (Aron & Aron, 1996) and SDT perspectives emphasize the benefits that one accrues and needs that are met through close relationships. What psychological factors would make a “higher love” that is truly focused on the other possible, if such a thing is, indeed, possible? Consideration of the problem of existential isolation leads to questions about the role of trust in relationships. This gets back to the question of believing in things that can never be definitively verified – a situation we face with our relationships with all others. How does this affect our relationships?

This chapter’s discussion of identity and self-esteem emphasized the pursuit of stable and coherent self-knowledge and positive self-evaluations. Despite the much touted utility of a coherent sense of oneself as a valued contributor to a meaningful universe, is such a concept necessarily illusory? Given the diverse situational forces, relationship demands, and intrapsychic needs that influence human behavior, is coherence and value merely something people project onto chaotic and ambiguous lives? As Crocker and Park (2004) asked, is self-esteem really as

beneficial as we have portrayed it? Is there really an underlying essence that is the true self? Why are some people more open to experience, change and growth, while others gravitate toward structure and rigidity?

The discussion of freedom and the will took the position that such things are more than figments of a frightened and needy human imagination – but are they? If the causal influence of consciousness on action is an illusion, then what is the function of conscious thought? Is the concept of unconscious will viable and testable? And if the will really is an important force in determining human behavior, much more needs to be learned about what comprises this system and how it works. If conscious will is an illusion, is it a valuable one? If people gave up this belief, how would their pragmatic functioning and coping with existential concerns change? Modernization, affluence, and democratization increase individualism. Do these trends grant more freedom and if they do, how would more personal freedom influence physical and mental health, close relationships, politics and intergroup relations?

Epilogue

Although rooted in questions that psychologists, philosophers, and other students of the human condition have asked since antiquity, XXP has taken social psychology in some fruitful new directions and perhaps even broadened the conceptual domain of our field. Social psychology textbooks are beginning to consider matters like mortality, will, meaning, and freedom, topics conspicuously absent from texts in the latter decades of the twentieth century. But as far as XXP has come, there are far more questions left to address than already answered. The perceived importance of and excitement generated by these questions will determine whether a new generation of creative researchers will further advance XXP and help social psychology attain a new level of relevance to and influence on the issues that matter deeply to us all.

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