
29. A terror management perspective on the evolution and function of human morality

Jonathan Morgan and Tom Pyszczynski

Moral concerns likely extend back to the earliest days of human history, and probably much further (e.g., Bekoff and Pierce, 2010). Most contemporary psychological theories of morality take an evolutionary perspective and posit that morality evolved to facilitate group living by solving cooperation and coordination problems, and discouraging costly conflicts (Curry et al., 2019; Graham et al., 2011; Shweder et al., 1997). Given that humans are highly social creatures, morality plays an especially important role in our lives and behavior. Indeed, research suggests that appraisals of the moral aspects of behavior are especially potent determinants of self-esteem and evaluations of others (Skitka et al., 2005). Human beings are also highly intelligent animals that live in a socially constructed world of ideas, values, and meaning. Though evolutionary perspectives provide indispensable insights regarding the similarities between the moral proclivities of humans and other species, a comprehensive understanding of human morality requires considering the role of uniquely human cognitive capacities, the subjective emotional experiences to which these capacities give rise, and the motivational impact of these emotions on the ideas that people generate to understand their world and manage their emotions.

In this chapter, we use terror management theory (TMT) (Greenberg et al., 1986; Pyszczynski et al., 2015; Solomon et al., 1991) to extend work on the evolutionary origins of human morality and the role that morality plays in regulating the behavior of individuals and groups. TMT posits that the evolution of sophisticated cognitive abilities led to awareness of the inevitability of death and a potential for overwhelming terror that had a powerful impact on diverse aspects of human behavior and culture. People manage this terror by imbuing reality with beliefs and values that enable them to believe they can continue to exist after physical death if they live valuable and virtuous lives. We argue that although human morality initially emerged to facilitate group living, the psychological processes that drive moral behavior changed dramatically when our ancestors became aware of the inevitability of death. The strategies for “solving” this problem added an important impetus for moral behavior beyond staying in the good graces of one’s peers. From this point on, morality served as a litmus test for immortality.

TMT is an existential theory, and like all existential theories, TMT focuses on the consequences of human consciousness and self-awareness. We view TMT and other existential perspectives as highly compatible with and complementary to evolutionary perspectives. Indeed, one of the goals of this chapter and much of our previous work (e.g., Pyszczynski, 2019) is to encourage integration of evolutionary and existential perspectives by showing how combining the two approaches yields a more comprehensive and nuanced understanding of important aspects of human behavior and experience; in this case, human morality. Towards this end, we start with a consideration of the multiple environments to which humans must adapt. Whereas evolutionary theories focus on the objective features of the environments in which organisms

live, existential theories focus primarily on the individual's subjective experience of those environments, while acknowledging the bedrock of external reality.

THE MULTIPLE PHENOMENOLOGICAL ENVIRONMENTS OF HUMANKIND

Drawing from ideas prevalent in continental philosophy and psychoanalysis, existential psychologist Ludwig Binswanger (1958) posited that people occupy multiple phenomenological environments to which they are constantly responding and adapting. This framework has been echoed and elaborated by anthropologists (e.g., Hallowell, 1967), sociologists (e.g., Habermas, 1985), and others who argue that these different environments are distinct facets of the world that people experience and to which they must adapt. Consequently, all three of these environments are important determinants of human behavior.

The most basic and concrete environment is the physical world, which Binswanger referred to as the *umwelt*. From the perspective of physical evolution, this is the most important environment because it contains the resources and threats that directly determine one's capacity to survive and reproduce. For highly social species such as our own, the *mitwelt*, or social environment, also plays an important role in evolution and behavior. The *mitwelt* is deeply interwoven with the *umwelt*, as one's status, for example, bears directly on one's capacity to access resources, avert threats, and mate. The *mitwelt* is conceptually distinct and contains its own unique affordances and challenges as people navigate friendships, betrayal, attraction, and exclusion, all of which are essential for survival and reproduction. Given how crucial the *mitwelt* is for the evolutionary success of a group-living species, it is unsurprising that the dynamic between the *mitwelt* and *umwelt* has been the primary focus for the bulk of theory and research in evolutionary and cultural psychology.

Humans must also adapt to the private world of consciousness and self-awareness. Binswanger referred to this private world of inner experience as the *eigenwelt*. At some point in our evolutionary history, *Homo sapiens* developed rich symbolic capacities including prospection, theory of mind, mental simulation, and self-reflective processing, to name just a few (Donald, 2001). These sophisticated cognitive capacities greatly increased the flexibility of human behavior, enabling our ancestors to quickly adapt to new environments and deliberately pass on useful information to offspring, peers, and future generations.

These sophisticated symbolic capacities also gave rise to a host of psychological problems. Being able to simulate possible future events, reflect back on our experience, imagine counterfactuals, and construct apparent truths, can be intensely disturbing. Though human cognitive sophistication is highly adaptive, it creates a host of challenges beyond those posed by our immediately present physical and social worlds. TMT is focused on one of the most troubling consequences of sophisticated human intellect: awareness of the inevitability of death.

TERROR MANAGEMENT THEORY

TMT posits that awareness of the inevitability of death, in an animal equipped with a variety of evolved mechanisms and motives that function to keep it alive, gives rise to the potential for paralyzing terror (Solomon et al., 1991). This potential for terror is an extremely aversive

eigenwelt experience that could interfere with effective goal-directed behavior in the *umwelt* and *mitwelt*. The aversive awareness of death led early (and contemporary) humans to find beliefs and values that manage this anxiety to be especially appealing, leading them to spread and eventually become part of widely shared cultural knowledge. The theory suggests that a tripartite anxiety-buffering system arose in response to the potential for terror that resulted from awareness of death which affected all three aspects of the environment in which people live.

Cultural worldviews are humanly created shared linguistic constructions, that: (1) imbue life with meaning, structure, significance, and permanence; (2) provide standards by which an individual can judge themselves and others, which provides self-esteem, the sense that one's life is valuable and significant; and (3) offer hope of continuing to exist beyond physical death, in the form of either literal or symbolic immortality. The earliest cultural worldviews were probably focused on finding food and shelter, and provided guidelines for how to interact with others in one's groups. Once awareness of death emerged, however, these *umwelt* and *mitwelt* concerns were biased toward the creation of a subjective world in which physical death was not the end of existence. This supernatural realm includes supernatural agents and rules that shape both everyday affairs and one's fate after death.

TMT specifies two forms of continued existence after death that cultural worldviews provide. Literal immortality is the belief that one will continue to exist after death, typically in a form that transcends our physical bodies. Indeed, most cultures have concepts of souls or similar (for example, the Egyptian *ka*, Hindu *atman*) that constitute the true essence of self and transcend the physical body. Though the specifics vary greatly, virtually all cultures that have spread widely and survived the test of time provide some hope of life after death, such as heaven, reincarnation, ghosts that coexist with living humans, or merging with ancestral spirits. This promise of continuity is usually embedded in religious systems, which explicitly detail possible afterlives, the quality of which depends primarily on one's moral behaviors.

Symbolic immortality, on the other hand, is a sense of being part of something greater than oneself that will continue to exist after one's own death. By being a valuable contributor to these enduring entities, people live on through what they leave behind. For example, being part of and making enduring contributions to literature, art, music, civil society, sports, or science are all forms of symbolic immortality; on a smaller scale, the impact one has on one's family and friends is another form. By being part of and doing things that contribute to groups or society, we continue to exist through our association with and contributions to them.

Faith or certainty regarding one's cultural worldview is a necessary but not sufficient requirement for assuaging death-related anxiety. Effective terror management also requires that we live up to the standards of our worldviews. That is, we must construe ourselves as valuable contributors to a meaningful reality. The immediate subjective experience of believing that we are meeting or exceeding the standards of our meaningful worldview is self-esteem, a sense of personal value. This feeling of value enables us to believe that we both qualify for whatever literal afterlife is part of our cultural worldview, and that we are making enduring contributions to a meaningful world that will continue to exist after we have passed. From the perspective of TMT, people are motivated to pursue and acquire self-esteem because of the protection that it provides from existential anxiety.

TMT proposes that cultural worldviews, self-esteem, and close relationships (see Mikulincer et al., 2003) function as three interacting components of the anxiety-buffering system through which people mitigate the anxiety associated with awareness of their death. In order for these

psychological buffers to effectively protect us from anxiety, we need others to share our conviction that our cultural worldview really is an accurate representation of reality, and that we really are valuable people who live up to the standards of our worldviews. Most of these beliefs are ultimately unverifiable: they are abstract ideas, values, and judgments, some of which even run counter to observable reality. There is a potential advantage to this unverifiability, since it makes them impossible to definitively falsify, and therefore more stable (Rappaport, 1999). But given the many possible ways of understanding the world, and differences of opinion regarding our own value and virtue, these processes require ongoing consensual validation from others. Others who share our beliefs and values increase the effectiveness of our cultural worldview as an anxiety-buffer, while those who see things differently undermine its effectiveness. Because this affects our susceptibility to anxiety, we react positively to those who bolster our worldviews, and negatively to those who undermine it. Indeed, from the perspective of TMT, how a person or group impinges on our anxiety-buffering system is a major determinant of how we feel and act toward them.

EMPIRICAL EVIDENCE

To date, well over 1000 experiments conducted in over 30 countries with diverse religious traditions have supported hypotheses derived from TMT (Pyszczynski et al., 2015). The main corpus of research supporting TMT comes from experiments testing three complementary hypotheses. Tests of the mortality salience hypothesis have shown that reminders of death (mortality salience, MS) increase positive reactions to people and ideas that affirm one's worldview, self-esteem, and close relationships, and increase negative reactions to those that threaten them. Tests of the anxiety-buffer hypothesis have shown that boosting self-esteem decreases anxiety and defensive behavior aimed at reducing anxiety. Finally, tests of the death thought accessibility (DTA) hypothesis have shown that threats to one's worldview, self-esteem, or close relationships increase DTA, and that bolstering any of these structures reduces it.

Studies combining these hypotheses have shown, for example, that boosting self-esteem or affirming one's worldview reduces the effects of MS on worldview defense and self-esteem striving, and that increasing DTA increases worldview defense and other typical responses to MS. These distinct lines of research provide converging evidence that TMT processes impact diverse aspects of our life, including political attitudes, ingroup bias, legal decisions, physical aggression, support for war and terrorism, charitable donations, romantic love, attitudes toward sex, desire for children, and many other behaviors. Although critiques have been raised and alternative explanations proposed for particular studies, no viable alternative successfully explains the convergence of findings across this diverse literature (for discussions of critiques and alternative explanations for TMT research, see Pyszczynski et al., 2015).

TERROR MANAGEMENT AND MORALITY

From the perspective of TMT, one of the most potent incentives for moral behavior is the way such behavior impacts one's status after death. All major religions that have withstood the test of time teach that one's fate after death depends on adherence to their faith's moral dictums

and maintaining faith in its core precepts. Adherence to moral standards is also an important determinant of self-esteem and evaluations from others, which themselves have a powerful influence on self-esteem. Indeed, research has shown that evaluations of moral aspects of behavior are the single most influential factor influencing evaluations of both oneself and others (Skitka et al., 2005). TMT views mitigating the potential for existential anxiety as one of the most potent motivators for moral behavior. Moral beliefs and values enable people to view the world as a just and meaningful place, in which virtuous behavior enables them to avoid negative outcomes while alive and after they die.

Research has shown that reminders of death strongly impact many forms of moral behavior and judgment, including all five of the domains specified by moral foundations theory (MFT) (Haidt, 2012; for a review, see Kesebir and Pyszczynski, 2011). One of the first tests of TMT found that MS led municipal court judges to issue harsher punishments for a moral transgressor; in this study, a woman accused of prostitution (Rosenblatt et al., 1989). In subsequent studies, MS has been shown to affect judgments across a variety of moral domains involving direct harm to others (Florian and Mikulincher, 1997). Research has also shown that MS increases charitable giving, especially to ingroup charities (e.g., Jonas et al., 2002). There is also evidence that MS intensifies reactions to perceived unfairness; for example, by increasing derogation of the victim of a random tragedy, which presumably defends belief in a just world (Landau et al., 2004). Conversely, learning about innocent victims who are severely injured elicits more DTA than learning about those who bear some responsibility for their injuries (Hirschberger, 2006). MS has also been shown to increase the appeal of justice-based arguments for military action and, when justice concerns are salient, increase support for violence even when it is expected that this is unlikely to improve the situation (Hirschberger et al., 2016). A large body of research has shown that MS increases ingroup loyalty and bias, outgroup derogation, stereotyping, and perceptions of group entitativity (see Castano and Deschesne, 2005). Another line of research has shown that MS increases deference to authority, in the form of support for leaders, such as United States presidents George W. Bush and Donald Trump, as well as hypothetical leaders who proclaim the greatness of one's ingroup (e.g., Cohen et al., 2004). Another program of studies has found that MS heightens disgust sensitivity, and that exposure to disgust elicitors increases DTA (Goldenberg et al., 2001).

These diverse lines of research show that death concerns play an important role in moral behaviors and judgments. Though the specifics of moral concerns vary across cultures and subcultures, the converging evidence reviewed above shows that one of the functions of morality is to mitigate anxiety surrounding the inevitability of death on an individual level within contemporary cultural milieus. In other words, it demonstrates how people respond to their *eigenwelt*, and how that affects, and is affected by, culture. We argue that considering the role of death concerns and *eigenwelt* processes in general sheds new light on rarely considered dynamics regarding the function, evolution, and development of morality. We turn now to a discussion of how these existential forces and dynamics fit into evolutionary analyses of morality, and argue that an integration of evolutionary and existential perspectives provides a more comprehensive understanding than either perspective alone. TMT also illuminates the very important role that religion plays in morality on both individual and cultural levels.

THE EVOLUTION OF HUMAN MORALITY

Moral Intuitions

Frans de Waal (2006) and other theorists have argued that many behaviors which we typically think of as moral, such as caring, sharing, ingroup favoritism, deference to leaders, disgust, and rebellion, are ubiquitous among highly social mammals (Bekoff and Pierce, 2009). This recognition of morality among other social mammals suggests that moral inclinations are a common evolutionary strategy to regulate social behavior among animals dependent on groups for survival (Tomasello, 2016). This focus on the adaptive utility of morality has become a ubiquitous feature of psychological theories of morality. Indeed, it is also an important component of our own analysis.

MFT (Graham et al., 2011; Haidt, 2012) expanded on these evolutionary ideas to provide a taxonomy of moral intuitions and how they facilitate social functioning among humans. MFT posits five basic moral foundations: (1) care/harm, reflecting concerns about the welfare of others; (2) fairness/cheating, reflecting concerns about equity and justice; (3) loyalty/betrayal, reflecting concerns about the welfare of one's group; (4) authority/subversion, reflecting deference to established leaders; and (5) sanctity/degradation, reflecting concerns about disgust, purity, and sacredness (Graham et al., 2013). A sixth moral foundation of liberty/oppression, focused on the need for freedom and autonomy, was later added to the theory (Iyer et al., 2012). MFT views these moral foundations as adaptively balancing the individual tendency for selfishness with the collective need for social cohesion.

The central proposition of MFT is that human morality is rooted in automatic emotional responses to behavior relevant to a finite set of moral intuitions that evolved to facilitate group living. These moral intuitions are then modified by cultures to adapt to the specific demands of particular groups and environment. Though a variety of conceptual and empirical criticisms have been lodged against MFT (e.g., Curry et al., 2019), its most central theoretical propositions remain largely unchallenged and, indeed, are shared by most contemporary theories of moral psychology.

Over time, these evolved moral intuitions are refined and elaborated by culture. Haidt (2012) used the metaphor of a manuscript that is edited, revised, and refined by culture. In most cultures, a major part of this process of cultural refinement was embedding these gut-level moral intuitions into narratives about gods, spirits, or forces of nature that monitored human behavior and meted out rewards to those who lived virtuous lives, and punishments to those who did not. This tight connection between morality and religion was recognized by some of the earliest theorists of religion (e.g., Durkheim, 1912/2008). From an evolutionary perspective, societal impact of moral intuitions was fortified by belief in deities who care about human behavior, and reward moral behavior and punish immoral behavior. This projection of moral intuitions into the minds of gods and spirits is typically construed as adaptive because it fosters cooperation in increasingly complex societies where monitoring everyone's behavior is impossible (e.g., Norenzayan et al., 2016).

Though it is reasonable to argue that such beliefs persisted because they promoted cooperation within groups, these theories cannot explain the origin or initial spreading of such beliefs. Long-term consequences of a trait or behavior cannot explain its initial occurrence or appeal.

Current evolutionary theorizing about the origins of ideas about gods and spirits generally explain such ideas as by-products of cognitive proclivities that were selected for other

purposes. For example, because of the important role that one's conspecifics and predatory members of other species play in life, it was adaptive for our ancestors to be hyper-sensitive to signs of agency and impute intentions quickly when such signs are detected. This capacity for theory of mind and agency detection likely also led early humans to impute agency, intention, and power to natural phenomena (e.g., Atran, 2002). We think that this is an important piece of the puzzle, but it leaves many questions unanswered.

Extrapolating from observations of contemporary hunter-gather societies, anthropologists and religious historians describe the earliest spirits as capricious beings that often cared little about the welfare of humans. But as societies became more complex, these spirits became both increasingly powerful and concerned about human morality (e.g. Norenzayan, 2013). What explains this shift, from capricious and indifferent spirits to morally concerned deities that are offended and angered by what humans do? When crafting their understanding of the world, unconstrained by existing knowledge and empirical evidence, why would early humans have invented one in which the supreme creator of the entire universe cares about whether or not they lied to their neighbor? We think it highly unlikely that the inventors of gods and afterlives cynically promoted ideas about supernatural beings in which they themselves did not believe, with the explicit goal of promoting social cohesion. Leaders and elites undoubtedly do sometimes use religion to manipulate the masses: sometimes to promote social cohesion, and sometimes to promote their own selfish interests and power. However, we doubt that this was a primary motivation for the invention of immortality-granting deities. Rather, we argue that the same individual-level psychological needs that motivate the masses to believe in gods and adhere to moral values led humans to invent a spiritual dimension in which death is not the end of existence.

Perhaps the most important question for understanding the role of religion in morality is: what led early humans to construe their increasingly powerful supernatural agents as granting life after death to people who follow their wishes but eternal damnation to those who violate them? Why would this specific reward and this specific punishment be so appealing? If social cohesion and control was the primary motivation for inventing gods who cared about human behavior, why not have them provide immediate tangible rewards, rather than have people reap the rewards or pay the costs for their moral behavior after they have died? Research has shown that delayed costs and rewards lose their potency over time, which make them less effective at inhibiting impulsivity (Madden and Johnson, 2010). A meta-analysis of the impact of incentives on prosocial behavior found that rewards and punishments can foster cooperation, but their impact is attenuated when the incentives are not costly to dispense (Balliet et al., 2011). One would assume that judging a person's moral behavior and deciding their fate in the afterlife is not costly for a deity, so delaying rewards and punishments to after one's death would seem to work against the social benefits posited.

Adaptationist theories answer these questions by arguing that these shifts were selected for because they promoted social cohesion and effective group living. Norenzayan et al.' (2016) influential "Big Gods" theory posits that a shift toward more powerful ever-vigilant morally concerned deities who mete out rewards and punishments was a necessary adaptation in larger, more complex, and more anonymous societies in order to promote prosocial behavior in the absence of direct surveillance by other humans. In a related vein, the supernatural punishment hypothesis (Johnson, 2015) suggests that these beliefs enable communities to avoid the costs of surveillance and punishment by offloading these social sanctioning tasks to supernatural agents. Consistent with these ideas, research suggests that people become more prosocial

when being observed (Bateson et al., 2006). Studies have also shown that inducing religious thoughts curbs selfish behavior, increases fairness towards strangers, and reduces cheating in anonymous settings (Norenzayan and Shariff, 2008). Interestingly, whereas greater belief in a punishing God is associated with less cheating, belief in a kind God is associated with more cheating (Shariff and Norenzayan, 2011).

As noted above, these explanations are persuasive accounts of the socially adaptive functions of these beliefs, but as Tinbergen (1963) helpfully clarified, explaining the adaptive function of a behavior is distinct from phylogenetic questions such as: why did these beliefs originally occur to individuals, and why were they compelling enough to spread through social learning processes within many separate communities? Why were these beliefs elaborated over time into (somewhat) coherent systems of interlocking beliefs and values? And why do these worldviews nearly always include a conception of the afterlife that is dependent on moral behavior? Functional theories, understandably, focus almost entirely on the consequences of moral beliefs and behavior in the *mitwelt*, with attention to how this cashes out in the *umwelt*. We suggest that answers to the phylogenetic questions raised above require consideration of the private experiences of individuals in the *eigenwelt*.

Awareness of Death and the Transformation of Cultural Meaning Systems

Cultural worldviews likely began emerging as people shared ideas and wove them together to provide useful answers to practical questions about the nature of reality and how to act effectively within it. Practical concerns about how to relate to others, how to stay warm, what food to eat, and similar issues, are still important components of all worldviews. As ways of sharing information and guiding conduct within a group, cultural worldviews are inherently social. Thus, it is unsurprising that the norms which emerged within a group would be woven into a cultural system serving the function of both regulating social behaviors and reinforcing the plausibility of the worldview itself. As others have noted, the social regulatory function of these norms helps to explain the breadth of seemingly moral behaviors among other social mammals (Tomasello, 2016). The transition from the moral inclinations of other social species to the uniquely complex system of human moral beliefs and values involves an additional important ingredient.

TMT suggests that dawning awareness of the inevitability of death was a seismic event in the history of our species that dramatically changed human nature in general, and morality in particular. Realizing that all living things, oneself included, eventually die, made the *eigenwelt* a much more difficult realm to inhabit. Though most—and perhaps all—animals likely experience fear or something like it in response to clear and present threats to their lives, the emergence of self-awareness, future-oriented thought, and other sophisticated cognitive abilities forced early (and present-day) humans to realize that death could come at any time from a multitude of sources, and that eventually everyone dies. To mitigate this potential for terror, meanings and values took on a new function. In addition to providing pragmatic guides for effectively navigating the *umwelt* and *mitwelt*, meanings and values became part of the emerging terror management system that quelled the rumble of panic that this newfound knowledge created in the *eigenwelt*. Thus, managing existential terror through commitment to a shared cultural worldview, and living up to the values inherent in that worldview, is an individual-level motivational force that encourages group cohesion by managing existential terror.

This terror management function is why the capricious invisible beings that early humans imagined as they applied theory of mind to natural phenomena were morphed into moralizing supernatural agents who cared about what people did, and granted rewards and punishments in an afterlife to those that conformed to their wishes. The relief from existential anxiety that is an inevitable consequence of human intelligence helps to explain why they emerged spontaneously in multiple distinct groups around the world, and why they spread so pervasively within those groups as to become central aspects of the vast majority of cultural worldviews that have stood the test of time and continue to influence people to this day. This relief from terror is an important part of the emotional response to moral behavior that motivates individual humans to act in accordance with moral principles. And it is the equanimity that morality provides on an individual level which enables these beliefs and values to effectively promote social cohesion and (relatively) peaceful living in large groups.

A wealth of evidence suggests that reminders of death lead believers to be more confident about the existence of an afterlife (e.g., Vail et al., 2012). Research has shown that death reminders increase religiosity and belief in both God and divine intervention, and MS also increases belief in supernatural agents from other cultures and religions, though this later effect occurred only among religious participants (Norenzayan and Hansen, 2006). Studies have also shown MS to increase distress when handling a religious object in a disrespectful way (Greenberg et al., 1995). Challenges to one's religious beliefs—for example, when Christians read an article about evolution—increase DTA (Schimmel et al., 2007). Research with a predominantly atheist sample showed that an ostensibly scientific article arguing that near-death experiences provide compelling evidence for life after death reduces DTA as well as defensive responses to MS (e.g., Dechesne et al., 2003). In a related vein, priming atheists with the possibility of indefinite life extension through medical science eliminates their tendency towards worldview defense following MS (Vail et al., 2020). These studies suggest that beliefs in an afterlife, gods, and supernatural spirits function to mitigate death anxiety by providing hope of immortality.

Of course, these immortality beliefs were not invented out of thin air. They built on an already existing animistic conception of nature and the moral intuitions of our primate ancestors. As MFT suggests, were cultures built on the pre-verbal moral intuitions that regulated social behavior in other mammals prior to the emergence of the cognitive abilities that rendered humans aware of the inevitability of death. Awareness of the inevitability of death, and the potential for terror to which it gave rise, was (and is) a powerful motivating force that led to the human innovation of making death transcendence contingent on behaving morally.

Relief from *eigenwelt* distress inspired people to imagine invisible worlds in which death was a mere transition to a better life for those who led virtuous lives. This internal psychological process made the *mitwelt* a safer and more hospitable place to inhabit, by providing motivation for people to behave in ways that were mutually beneficial. It also transformed the *umwelt* by leading to the constructions of monuments, pyramids, and places of worship that provided physical manifestations to reify this imaginary world where death is not the end, which feeds back into the *mitwelt* by providing places for groups of believers to gather and consensually validate each other's death-denying beliefs.

The specific characteristics attributed to immortality-granting deities were likely driven by the human tendency to anthropomorphize. As many scholars have noted, societies tend to create gods in their own image (e.g., Feuerbach, 1845/2004). When imagining spiritual beings powerful enough to reverse death, the architects of religion likely looked to the powerful tribal

leader within their communities, who demanded subservience and fealty. Indeed, in many cultures local leaders were seen as manifestations of the gods. Attributing the power to reverse death to one's deities greatly amplified the clout of their demands, regarding both morality and worshipful submission.

The gradual development of cultural worldviews under pressure from all three selective environments may explain how moral concerns were grounded in deontological principles rather than utilitarian ones (Tetlock, 2003). Doing the right thing was transformed from a practical way of staying in the good graces of one's group, to a matter of cosmic significance and universal principle rooted in the wishes of gods that dictate the afterlife. Research has shown that moral principles tend to be deontological in nature, taken to be objective features of reality rather than subjective preferences (Goodwin and Darley, 2012). Research also suggests a link between religious concerns and deontological moral judgment (Piazza and Sousa, 2014), and that deontological judgments are more strongly held (Ginges et al., 2007).

Support for the idea that existential motives play an important role in making morality a deontological rather than practical matter comes from studies showing that MS reduces the tendency to view morality as subjective, perhaps shedding additional light on studies cited above showing MS leading to harsher moral judgments (Yilmaz and Bahçekapili, 2018). In a related vein, Hirschberger et al. (2016) found MS to activate justice mindsets rather than cost-benefit thinking among Israeli participants asked to provide reasoning for how to respond to a terrorist attack. This MS effect on emphasizing justice over consequences was associated with supporting violent retribution.

We agree with the many theories which posit that belief in a moralizing god promotes social cohesion and discourages behavior harmful to one's group. The characteristic of these deities and the supernatural realms within which they are embedded, however, appears to be fine-tuned to meet individual-level psychological needs and fears. Having a god that looks like its believers and cares about their most mundane actions helps to affirm their special status in the world. Having an ultimate arbiter of right and wrong helps to reassure believers that the world is just. And having that god be at the core of one's group, and favor it over all others, increases collective self-esteem which also mitigates fears about what happens when we die. In short, for a god to care about our morality helps people to feel as though they are in a special relationship with a power that can determine their well-being both in this life and beyond. This individual-level psychological function of commitment to gods and morality is an important mechanism through which morality and religious beliefs promote successful group living.

SUMMARY AND CONCLUSION

This chapter presents an integration of TMT with cognitive byproduct and adaptationist evolutionary theories of the origins and function of morality and religion. Pre-verbal moral intuitions evolved in humans and other species to facilitate group living. These intuitions served as the building blocks that over time led to complex systems of beliefs and values that undergird the diverse and sometimes conflicting moral beliefs and values found in the modern world. Early humans also applied their evolved cognitive proclivities for theory of mind and agency detection to understand events in their world as caused by invisible spirits and deities.

A major shift in the psychological underpinnings of human morality occurred when increasingly sophisticated cognitive abilities led to awareness of the inevitability of death, which gave

rise to an ever-present potential for terror. This potential for terror created a strong preference for understandings of reality that helped people to manage their terror, leading to the invention of gods and spirits that served as gatekeepers to an afterlife, the quality of which depended on behaving in a moral way. From this perspective, fear of death provided the impetus that led people to invent ideas of an afterlife, minded by morally concerned supernatural agents. This same fear led others to find these ideas appealing enough to spread within many distinct groups via social learning processes. In this way, moral behavior shifted from being motivated solely by the desire to stay in the good graces of other group members (and fear of ostracism if viewed as immoral), to being driven by concerns about pleasing far more powerful beings or forces that controlled one's fate after death. Including the role of this internal psychological dimension, the *eigenwelt*, provides a more nuanced and comprehensive understanding of both the evolution of morality and the individual-level processes that motivate moral behavior.

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