The Terminal Treadmill

A Terror Management Perspective on Everyday Routines

by

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Declaration

This thesis presents original research conducted at the School of Psychology, University of Kent, while the author was enrolled as a part-time postgraduate student. All work herein was completed under the supervision of Dr. Arnaud Wisman and has not led to the award of a degree from this or any other institution previously. The theoretical insights and empirical research detailed in this thesis are solely the contributions of the author, except where explicitly acknowledged.

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It happens that the stage sets collapse. Rising, streetcar, four hours in the office or the factory, meal, streetcar, four hours of work, meal, sleep, and Monday Tuesday Wednesday Thursday Friday and Saturday according to the same rhythm—this path is easily followed most of the time. But one day the "why" arises and everything begins in that weariness tinged with amazement.

—Albert Camus, *The Myth of Sisyphus*

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Abstract

This thesis explores existential perspectives on everyday routines through the lens of terror management theory (Ch. I), an empirical framework for studying how the awareness of mortality shapes everyday thought and behavior. We review wide-ranging studies illustrating the terror management function of structured conceptions of reality and the self (Ch. II). Going further, we introduce the Routine Terror Management (RTM) model, positing that everyday routines serve a dual role in terror management (Ch. III). In the structural role, routines afford order, predictability, and consistency, buffering mortality concerns, particularly for those lower in self-esteem. Three studies support this structural role: After exposure to mortality reminders, individuals lower in self-esteem found their everyday routines more appealing (Study 1), experienced reduced death-thought accessibility when their routines were made salient (Study 2) and expressed less openness to changing their routines (Study 3; Chapter IV). In the cultural role, adaptive routines—those conducive to outcomes valued by the culture—affirm that one is meeting prescribed standards of value, thus buffering against mortality concerns in a broader cultural context. We present the Cross-Dimensional Adaptive Routines Inventory for measuring routine adaptiveness and test its predictive value in four studies (Ch. V). As hypothesized, higher levels of adaptive routines predict higher self-esteem (Study 4) and stronger beliefs in the importance (Study 5) and achievability (Study 6) of cultural standards. Further, we explore how mortality reminders impact those lacking in adaptive routines. After mortality reminders fail to motivate individuals lower in adaptive routines to bolster beliefs in the importance and achievability of cultural standards (Studies 5 and 6), we find that mortality reminders amplify the motivation to self-escape among this group. In contrast, those higher in adaptive routines show a lower motivation to self-escape that is not provoked by mortality reminders (Study 7). Implications and future directions for the RTM model are discussed (Ch. VI).

Introduction

I tend to wake up at roughly the same time every morning.

I routinely set aside time for household chores.

My workday runs like a well-oiled machine.

Each of these statements is faithfully mundane. From a peripheral view, waking up to a schedule, keeping a clean kitchen floor, or cranking out work as a system of gears bears no existential weight. Indeed, these activities are often seen as automatic or habitual parts of everyday life, lacking the dramatic or introspective qualities typically associated with the longing for significance and the dread of nothingness. However, according to existential theorists, the subtlety of these routines is precisely what integrates them so deeply into the fabric of human existence (e.g., Fromm, 1956; Sartre, 1938/2013). In effect, everyday routines' pervasiveness and persistent repetition provide a continuous, though often implicit, source of structure while iteratively shaping outcomes that bear critical implications for an individual's sense of enduring value.

Accordingly, in the current perspective, inspired by terror management theory (TMT; Greenberg et al., 1986), we consider for the first time that everyday routines might play essential roles in terror management. By integrating the RTM model, we reinforce existing paradigms within TMT, illustrating that the mechanisms through which individuals manage mortality concerns are intricately embedded in their everyday routines.

We first review a brief exposition of evidence supporting the overarching hypothesis that everyday routines are not merely mundane repetitions but reliable behavioral patterns with crucial roles in terror management. Then, after pointing out the implications of this evidence for TMT, we walk through the novel routine terror management (RTM) model that

provides a preliminary framework for understanding the roles of everyday routines in terror management. After that, we review research supporting hypotheses derived from the model and present seven studies designed to test these hypotheses further.

In sum, the presented studies position everyday routines at the crux of a dynamic relationship between the terror management functions of structure and the cultural worldview. As we will discuss, everyday routines work in concert with terror management motivation, embedding everyday experience within a predictable context of psychological security. Moreover, when adaptive, these routines can bolster self-esteem and reinforce the notion that cultural standards are important and achievable. Conversely, individuals who lack adaptive routines tend to have lower self-esteem and weaker beliefs in the importance and achievability of cultural standards. As a result, they are more motivated to avoid or reduce self-awareness when confronted with reminders of mortality, engaging in what is known as existential self-escape (Wisman, 2006; Wisman et al., 2015).

Even for individuals lacking adaptive routines, there remains a beacon of hope. Philosophers and thinkers who have deeply pondered existential matters, such as Camus (1942/2018) and Heidegger (1927/2010), alongside therapists like Frankl (1946/1959), May (1953), and Yalom (1980), suggest that reminders of mortality can prompt a reevaluation of priorities and activate the potential for psychological growth. In closing, we identify and discuss a structurally and culturally supportive context in which mortality reminders might prompt individuals lacking adaptive routines toward deeper investments in cultural standards. This idea is further explored, and future directions for RTM research are discussed in the concluding chapter. Hopefully, the reader will find this thesis a step toward acquiring a richer understanding of routines and their profound implications for psychological well-being in everyday life.

I. Existentialism and the Psychology of Everyday Routines

The notion that everyday routines play a crucial role in terror management has its roots in existentialism, a philosophical perspective that emerged in late 19th and early 20th century Europe. The central tenet of existentialism is a concern with the fundamental questions of human existence, such as the meaning and purpose of life (e.g., Frankl, 1946/1959; Nietzsche, 1886/1997), the nature of freedom and choice (e.g., de Beauvoir, 1945/1964; Sartre, 1943/2021), the role of the individual in society (e.g., Fromm, 1955; Kierkegaard, 1846/2009), and the inevitability of death (e.g., Camus, 1942/2018; Heidegger, 1927/2010). Existentialism emphasizes individual freedom and responsibility while acknowledging the certainty of death and the uncertainty of meaning. It argues that individuals must confront these challenges and create personal meaning and purpose rather than relying on external authorities or systems of belief. Nevertheless, existential theorists argue that individuals can find refuge in adopting social roles and immersing themselves in routines (e.g., Becker, 1973; Heidegger, 1927/2010; Kierkegaard, 1849/1997a).

This chapter summarizes three sources of evidence supporting an existential view for the psychological investigation of everyday routines. We start with a concise exposition on routines and a summary of research highlighting how routines develop from conscious goal-directed behavior into automatic behavioral programs, i.e., sequences of habit. Next, we review a brief history of existential philosophical investigations into the role of routines in everyday life. In conclusion, we provide an introduction and overview of Terror Management Theory, a prominent scientific framework for existential inquiry in social psychology. Then, we begin to contextualize routines within its research paradigm.

The Psychology of Everyday Routines

Although routines have often been described in theoretical and correlational literature, no preceding empirical work has defined routines for controlled experimental investigation.

Most broadly, routines have been conceptualized as sequences of habit (Wood, 2021). The dominant perspective defines habits as automatic behaviors resulting from frequent repetition within a stable context (e.g., Ouellette & Wood, 1998). Whereas habits are separate and distinct actions, a routine consists of more than one repetitive action (Avni-Babad, 2011). For example, slamming the door upon arrival may be considered a habit, while slamming the door, kicking off one's shoes, hanging up the keys, and then plopping down on the couch may be a part of one's after-work routine. As part of a routine, each action is frequently repeated. This frequent repetition leads to highly automatic processes that require minimal attention or conscious control (Fitts & Peterson, 1964). Ultimately, habits (i.e., door-slamming) are performed automatically without conscious intention (Wood et al., 2002). However, compared to individual actions like habits, automatic performance may emerge later for sets of consecutive actions like routines (Lally, van Jaarsveld, Potts, & Wardle, 2010). Therefore, routines may vary in levels of automaticity. In turn, we define routines as frequently repeated and well-learned sets of consecutive actions (see Avni-Babad, 2011) requiring minimal attention or conscious control (VandenBos, 2007).

As existentialist philosopher Jean-Paul Sartre observes, routines are fundamental to everyday life. "Nothing happens while you live. The scenery changes and people come in and go out; that's all. There are no beginnings," he goes on, "Days are tacked onto days without rhyme or reason, an interminable, monotonous addition" (Sartre, 1938/2013). Indeed, real-time experience sampling studies demonstrate that roughly 43% to 47% of human activities are enacted almost daily and usually in the exact location (Quinn & Wood, 2005; Wood et al., 2002). As we will explore later in this chapter, prevailing theory with vast empirical support suggests that everyday thoughts, behaviors, and beliefs can keep existential concerns safely out of conscious awareness. However, despite comprising nearly half of all human behavior,

the construct of everyday routines is not yet part of the prominent empirical models for investigating the relationship between existential concerns and human behavior.

A greater understanding of routines may help explain human behaviors and processes that could be otherwise erroneously attributed to other reasons, such as affect (Adriaanse et al., 2011; Shiffman et al., 1997) or intentions (Ji & Wood, 2007). Indeed, as Mazar and Wood (2022) observe, people tend to overvalue the role of introspective thoughts, feelings, and emotions in self-judgments (Pronin, 2009), and they interpret actions as intentional by default (Rosset, 2008). In turn, people often undervalue the influence of habit (Ji & Wood, 2007; Ouellette & Wood, 1998; Neal et al., 2012). As we will discuss next, the habitual inertia of everyday routines first catches the attention of existentialists. It is the essence of what Sartre described as the passing of days "without rhyme or reason, an interminable, monotonous addition" (Sartre, 1938/2013).

On a fundamental level, the habitual inertia of everyday routines imbues routines with predictive power. Indeed, prior research has shown that once frequently repeated in stable contexts, past behavior is the primary predictor of future behavior, regardless of intentions (e.g., Albarracín et al., 2002; Ferguson & Bibby, 2002; Ouellette & Wood, 2021; Verplanken et al., 1998). Moreover, evidence suggests that the predictive power of routines is not contingent upon utility. For example, in a study on the effects of routine, participants with prior routine-heavy participation in a business commerce simulation game later stuck to their routines in gameplay even when new information suggested that a deviation would benefit them (Betsch et al., 2001). In other words, people cling to their routines regardless of any practical benefit, even to their detriment.

The Einstellung effect is a classic example of how routines predict behavior (even to the detriment of utility). Translated from the original German, this usage of *Einstellung* is akin to that of the English word *setting*, as found in the controls of automated equipment or

modern computer software. In a study illustrating the Einstellung effect, participants were given three water jars, each with the capacity to hold a different, fixed amount of water, and then given the task of measuring a provided amount of water using only the jars (Luchins & Luchins, 1959). As predicted, participants continued to use their personally developed routines from earlier tasks to find the measurements for later tasks, even when quicker and more efficient methods were available. Thus, the Einstellung effect illustrates that when people repeatedly face the same problems or situations, their responses become routinized and repeated without qualification—or "rhyme or reason" (Sartre, 1938/2013). Indeed, the specific intentions of frequently repeated actions become implicit as individual actions merge into a routine (i.e., sequences of habit; Wood, 2021). As a result, rather than evaluating whether routines are meaningful or necessary, people carry out routines without so much as a sense of doing (Burns, 1958). As we will discuss next, existentialists like Sartre observed that habit, leading to the persistent automatic repetition of everyday routines, was beginning to reshape the social world and proffered their respective views. Recent empirical research on theories derived from their views reveals a common thread that forms the basis of this thesis.

The Existentialists on Routines

Philosophical interest in routines can be traced back to the biblical writer of *Ecclesiastes*, who mused on the futility of human existence and the repetitive nature of life. He observed that "there is nothing new under the sun" and that all human efforts and accomplishments are ultimately fleeting and "meaningless" in the face of mortality (New International Version, 1978/2011, Ecclesiastes 1: 1–3). However, the writer's arguments eventually merge into an appreciation of life's cyclical nature, "There is a time for everything, and a season for every activity under the heavens" (3:1). This dialectical perspective on the cyclical and routine nature of human existence serves as a precursor to the ideas later explored by existential philosophers.

In the mid-19th century, philosopher Søren Kierkegaard (1849/1997a) posited that adopting social roles leads to developing routines aligned with social expectations, which can be a coping mechanism for existential anxiety. Kierkegaard (1844/1980) famously wrote, "Anxiety is the dizziness of freedom" (p. 67), highlighting how the freedom and responsibility to make choices can be overwhelming. However, he also warned that relying too heavily on routines risks sacrificing personal freedom and authenticity for a false persona or "lie of character" (1849/1997a). Kierkegaard contended that embracing the limited choices and apparent security of a routine life can lull society into triviality and away from personal significance. Instead, he proposed that individuals should actively engage in their lives, making conscious choices rather than simply taking the path of least resistance to understand the meaning of existence and truly be alive.

It is worth noting that characterizing Kierkegaard as anti-routine would oversimplify his views. He believed that people should consciously choose both novel actions and routines. In his work "Repetition: An Essay in Experimental Psychology" (1843/1997b), Kierkegaard argues that intentionally repeating a desired behavior can lead to a deeper understanding and appreciation of oneself, one's relationship to the world, and the divine. Therefore, Kierkegaard's arguments suggest that routines can serve either as a means of shielding against existential anxiety or as a source of personal meaning in the face of it.

Building on Kierkegaard's ideas, mid-twentieth-century social psychologist and humanist philosopher Erich Fromm developed his nuanced view of routines. While recognizing that routines can provide a sense of security and predictability necessary for adaptive functioning and goal achievement, Fromm argued that excessive routine could become existentially distracting, hindering the pursuit of more profound meaning and purpose in life (Fromm, 1956). Moreover, he suggested that routines had become more than

just a false persona; they had become a source of alienation from the core existential concerns that define humanity.

> From birth to death, from Monday to Monday, from morning to evening—all activities are routinized and prefabricated. How should a man caught in this net of routine not forget that he is a man, a unique individual, one who is given only this one chance of living, with hopes and disappointments, with sorrow and fear, with the longing for love and the dread of the nothing and of separateness? (1956, p. 17)

According to Fromm, human life is often characterized by routinized and pre-planned activities that can distract people from their search for purpose and meaning as unique and finite individuals. This emphasis on routine, in turn, risks eroding one's sense of individuality and connection to the deeper existential concerns that define one's life.

Also building on Kierkegaard's ideas, Martin Heidegger, a German existential philosopher and phenomenologist, proposed three fundamental aspects of human existence. The first was *facticity*, referring to the practical limitations and conditions of existence that humans must face, regardless of their choices. The second was *existentiality*, which highlighted the duality of human existence as both what one is and what one can become. The third was *fallenness*, in which individuals seek security in daily life's routine and mechanical nature. Heidegger saw fallenness as the antithesis of authenticity, with individuals conforming to social expectations and living a life dictated by the "they-self" or "the-they." According to Heidegger, the solution to fallenness and routine living is to confront mortality, which can shift one's perspective and priorities towards what is personally significant rather than socially imposed values (Heidegger, 1927/2010). This approach to existentialism expands on the ideas of other thinkers by offering a more comprehensive philosophy of human struggle and suggesting that the confrontation of

mortality can help resolve the tension between routines, cultural norms, and the search for authenticity.

Conversely, French philosopher Albert Camus rejected Kierkegaard's notion that routines could come at the risk of personal significance. To Camus, the path to personal significance starts with embracing one's routines. In the *Myth of Sisyphus* (1942/2018), Camus suggests that, in a universe devoid of meaning, one can find true happiness through personal responsibility and lived experience of one's routine life. However, the path he explains is cyclical. A routine life leads to weariness (or existential exhaustion) and provokes the question of whether life is worth living. According to Camus, the answer to this question is a qualified *yes*. He proposes that an individual is free to live life happy and unencumbered only by accepting the contradiction between one's longing for meaning and the universe's inability (or refusal) to provide it, i.e., accepting the *absurd* [1]. As we will explore next, accepting the absurd leads back to routines.

Camus concludes with a discussion of the Greek myth of Sisyphus, condemned for all eternity to a particularly arduous routine: hopelessly rolling a rock to the top of a mountain only to see it roll back down. According to Camus, Sisyphus embodies the ideal absurd hero, and his punishment typifies the human condition. Camus argues that Sisyphus must endure an eternal struggle with no hope of transcendence, making his plight a metaphor for the futility of human existence. However, if he accepts that there is nothing more to his life than this absurd struggle, he can make it his own and find meaning and happiness. "His fate belongs to him. His rock is his thing" (p. 123). Here, Sisyphus' rock represents his struggle against the absurdity of existence. Through the analogy of Sisyphus, Camus emphasizes the importance of finding meaning and purpose in life, even in the face of a seemingly futile and repetitive

[1] Camus' absurdist view rejects the existentialist notion of higher-level meaning, emphasizing instead the lower level meaning of physical experience (see Camus, 1942/2018, p. 6).

existence. In conclusion, he argues that individuals should create personal meaning by embracing their struggles and committing themselves to their unique pursuits, as objectively meaningless as they may be.

Cultural anthropologist Ernest Becker starts at the intersection of existentialism and absurdism. Drawing on existentialist philosophy, he sought to understand the motivations behind human pursuits of everyday meaning (e.g., cause and effect) and transcendent meaning (e.g., self-esteem). He began his work with an early focus on everyday actions. Echoing Camus's absurdist-constructivist view, Becker first posited that meaning at a fundamental level is created in human action "as problematic situations are overcome and reduced to predictable habit" (1964, p. 13). He further developed this notion of the basis of meaning in everyday actions, suggesting that everyday actions provide a sense of safety through structure and predictability (1971). Indeed, Becker also agreed with Kierkegaard and Fromm on routines' protective yet stifling nature. He observed that as "many prisoners," people are "comfortable in their limited and protected routines, and the idea of a parole into the wide world of chance, accident, and choice terrifies them" (1973, p. 87).

Nevertheless, Becker also observed that people, for the most part, go about their lives unaware of harsh existential realities. The terror, he hypothesized, is buffered below conscious awareness, and he was interested in the psychological mechanisms that make this possible. The culmination of Becker's work, *The Denial of Death* (1973), combines insights from sociology, anthropology, existential philosophy, and psychoanalysis into a coherent framework for understanding how concerns with mortality shape human cognition and behavior. Although the existentialists' postulations regarding everyday routines (including Becker's) have remained absent from modern empirical work in existential social psychology, investigations of the proposed relationship between existential concerns, cultural standards, and behavior commonly extend from Becker's work. As we will discuss in the

next section and the following chapters, an analysis of everyday routines through the lens of Becker's framework and empirically supported theory provides a malleable existential perspective on routines and the basis for this thesis.

Terror Management Theory

Deriving from Becker's work, terror management theory (TMT; Greenberg et al., 1986) is based on the premise that the human problem of existential concerns derives from the human sense of *self*. Specifically, the human brain's evolution led to two relevant intellectual capacities: high self-awareness and the cognitive ability to project the self across space and time (Deacon, 1997; Gould, 1982; Leary & Buttermore, 2003). As a result, unlike other animals, humans can shift attention away from a barrage of sensory experiences and choose to act in various ways, depending not only upon instincts but also on a capacity to learn, think, and direct behavior toward personal goals (Ajzen & Kruglanski, 2019; cf. Ajzen, 1991). In addition, because humans are self-aware and cognitively able to project their existence across space and time, they know they will one day cease to exist. This awareness of personal mortality, stemming from self-awareness, creates the potential for mortal terror.

TMT argues that people manage the awareness of personal mortality (and avoid mortal terror) by developing and maintaining a cultural worldview and self-esteem (Greenberg et al., 1997; Pyszczynski et al., 1999). As a symbolic defense against mortality awareness, people develop an individualized version of the standards and values espoused in their culture (i.e., their individualized worldview) and attempt to live by those standards and values. This personal investment in the worldview assures that some aspect of the self (e.g., soul, children, values, or legacy) will live on after death. TMT holds that successful investment in the individualized cultural worldview is reflected in the sense of self-esteem or a general sense that one is a valued contributor to a meaningful world (see Pyszczynski et al.,

2004). In a sense, self-esteem signifies safety against the prospect of mortality (see Greenberg et al., 1997).

TMT's Central Hypotheses

Several hypotheses follow from TMT. First, the *mortality salience hypothesis* posits that if the symbolic defense system (worldviews and self-esteem) protects people against mortality concerns, then reminders of death should increase efforts to defend it. Supporting this notion, research has demonstrated that mortality salience can enhance receptiveness to positive personality feedback (Dechesne et al., 2003), as well as more favorable evaluations of individuals who praise one's culture and more critical assessments of those who disparage it (e.g., Greenberg et al., 1990). Some studies suggest that underlying these effects is a more general existential need for people to make sense of themselves and the world around them. For example, mortality salience increases preference for well-structured information and a greater dislike for poorly structured information (e.g., Landau et al., 2004). Even yet, the effects of mortality salience can be highly specialized. For example, mortality salience increases self-esteem striving in the form of increased self-serving attributional biases (e.g., Mikulincer & Florian, 2002), effort on activities that are central to one's self-esteem (e.g., Taubman-Ben-Ari et al., 1999; Peters et al., 2005), and behavior in line with both chronic and situationally primed standards (e.g., Rothschild et al., 2009).

Another prediction from the mortality salience hypothesis is the *anxiety buffer hypothesis*, which posits that self-esteem reduces defensive reactions to mortality salience. Studies investigating the anxiety buffer hypothesis have shown that high self-esteem predicts lower levels of anxiety in response to threats (Greenberg et al., 1992), reduces death-related cognition (Harmon-Jones et al., 1997), and reduces proximal defenses aimed at denying one's vulnerability to an early death (Greenberg et al., 1993).

TMT also posits the *DTA hypothesis,* which holds that if a psychological structure protects against thoughts of death, then threatening that structure should increase the accessibility of death-related thoughts (DTA) and activating that structure should reduce DTA or prevent an increase in DTA due to subsequent threats. In support of this reasoning, studies show that threatening people's cultural values or religious beliefs can heighten DTA (e.g., Friedman & Rholes, 2007; Schimel et al., 2007). Conversely, other studies show that, following mortality salience, the opportunity to defend one's cultural worldview or enhance self-esteem decreases DTA (Arndt et al., 1997; Mikulincer & Florian, 2002).

Finally, building on prior research demonstrating that self-awareness creates the potential for mortality concerns (Arndt et al., 1998), Wisman and colleagues (2015) posit the *existential escape hypothesis.* The existential escape hypothesis states that people with lower self-esteem (unable to achieve cultural standards) are more likely to avoid self-awareness when confronted with mortality. The hypothesis is supported by objective self-awareness (OSA) theory (Duval & Wicklund, 1972; Silvia & Duval, 2001), which suggests that people are especially motivated to escape self-awareness when they do not believe that they can reduce the discrepancies between who they are and whom they feel they should be or want to be. In support of the existential escape hypothesis, studies have shown that reminders of mortality motivate individuals low (but not high) in self-esteem to avoid or reduce self-awareness (e.g., Wisman et al., 2015).

Replication of TMT Research

In a landmark study, Klein et al. (2019) critically examined the replicability of TMT's mortality salience hypothesis by revisiting Greenberg et al.'s influential 1994 study, demonstrating how reminders of mortality can intensify the defense of pro-American views. Previous attempts to conduct a preregistered, high-powered replication of a study testing a

mortality salience hypothesis yielded mixed results.[2] Noting this gap, Klein and colleagues conducted an extensive analysis across 17 laboratories with 1,550 participants. This multi-lab study specifically aimed to replicate the findings of Greenberg et al. (1994, Study 2) and assess whether the involvement of original study authors would improve the likelihood of successful replication. Laboratories were assigned to one of two conditions: some labs relied on their interpretation of Greenberg et al.'s original methodology, while others implemented detailed procedures provided by the original authors.

Despite extensive collaborative effort, the study found no significant evidence of Greenberg et al.'s (1994; Study 2) worldview defense effect across either condition. This outcome suggested that the original findings were false positives, the necessary conditions for observing the effects were not fully understood, or these effects no longer existed. However, Klein et al. (2019) also acknowledge inherent challenges faced in replication studies, such as potential changes in societal contexts[3] and the subtleties involved in experimental procedures, which might influence replicability. Despite failing to replicate Greenberg et al.'s key finding, Klein and colleagues' groundbreaking multi-lab study highlights the importance of replication in psychological research, encouraging a deeper examination of methodological practices and theoretical assumptions.

Nevertheless, further examination suggests a more nuanced interpretation of Klein et al.'s (2019) findings. Chatard et al. (2020) note that, despite efforts to ensure academic rigor, Klein and colleagues deviated from their preregistered methodology by incorporating smaller study samples, a move not disclosed, and which potentially compromised the integrity and

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2 Klein et al. (2019) highlight six high-powered replication studies that were pre-registered. Among these, three studies did not support the initial findings (refer to Rodríguez-Ferreiro et al., 2019; Sætrevik & Sjåstad, 2019; Schindler et al., 2021), while the remaining three successfully corroborated the original results (see Dunn et al., 2020; Schindler et al., 2019; Vail et al., 2019).

3 Klein et al. (2019) acknowledge a forewarning issued by Greenberg et al. (1994), the original authors, who cautioned against using an anti-American essay for worldview threat manipulation during a period characterized by reduced nationalistic optimism and increased political dissension. For further discussion, see Chatard et al. (2020).

advantages of preregistration. In light of this discrepancy, Chatard and colleagues reevaluated the data from Klein and colleagues' multi-lab replication project.

Upon reanalyzing Klein et al.'s (2019) data and excluding studies that fell short of the preregistered sample size threshold (40 participants per cell), Chatard et al. (2020) discovered that the data, contrary to Klein et al.'s initial conclusion, did indeed replicate the original study's findings. Notably, this replication success was observed specifically in the subset of studies that adhered to the original authors' expert advice, underscoring the likelihood of replication when guided by the expertise of seasoned researchers in the field. In sum, Chatard and colleagues' findings raise the possibility that Klein et al.'s (2019) failure to replicate was due to the inclusion of underpowered, heterogeneous, and imprecise small studies. In conclusion, Chatard et al. emphasize the crucial role of strict adherence to preregistered plans in research to prevent misleading results.

Comprehensive Meta-Analyses

Shifting our focus from replicating individual studies to examining broader meta-analytic research offers invaluable insights. By aggregating and synthesizing findings from numerous studies, meta-analyses can clarify the strength, consistency, and generalizability of research outcomes across various contexts. Several meta-analyses have affirmed the validity of TMT's mortality salience hypothesis (Burke et al., 2010; Burke et al., 2013; Martens et al., 2011). Notably, the most comprehensive among these meta-analyses, a random effects analysis of 277 individual studies by Burke et al. (2010), revealed an average effect size of r^2 = .12, indicative of a moderate effect, presenting an optimistic view of TMT's evidential value. However, as Chen et al. (2023) noted, factors such as experimenter effects and the absence of bias reduction techniques in Burke et al.'s analysis could lead to overestimating the actual effect size (see Yen & Cheng, 2013).

In a more recent review, mentioned earlier, Chen et al. (2023) scrutinized 826 TMT studies with advanced meta-analytic tools, such as the *p*-curve and *z*-curve analysis, and bias-corrected traditional meta-analyses (see Bartoš et al., 2022; Bartoš & Schimmack, 2022; Simonsohn et al., 2014a, 2014b). Chen and colleagues' findings reveal a landscape of conflicting conclusions, underscoring the diverse methodologies and philosophical underpinnings of the meta-analytic tools used. The authors concluded that while some studies on the mortality salience hypothesis show replicable effects, these effects are highly heterogeneous and underpowered. In sum, Chen and colleagues' examination calls for future research to anticipate smaller effect sizes and adhere to rigorous experimental protocols, contributing significantly to discussions on improving research methodologies in psychology, especially concerning the effects of mortality awareness.

Despite methodological challenges, the research investigating TMT has grown substantially, with over 1,500 studies conducted across more than 20 countries (Vail et al., 2019). This extensive and geographically diverse research base underscores the global relevance and enduring interest in exploring how mortality awareness affects human cognition and behavior. The findings suggest that concerns over mortality, underpinning the need for self-esteem, implicitly motivate people to conform their thoughts and actions to cultural standards. Given that everyday routines comprise a substantial portion of everyday behavior and encompass cultural norms, rules, and constraints (Gallimore & Lopez, 2002; Quinn & Wood, 2005; Wood et al., 2002), the study of everyday routines emerges as a promising pathway for advancing TMT. Such inquiries could illuminate how cultural worldviews and self-esteem manifest and are reinforced in everyday life, thus deepening our grasp of the cognitive and social processes by which individuals manage their mortality concerns.

Perspective on Replication Challenges

Discussions surrounding the replicability of TMT findings (particularly MS effects) have emerged as part of the broader replication crisis in social psychology. Although early TMT research demonstrated significant results across many domains, the failure of several studies to replicate consistently has sparked debate. This controversy is not unique to TMT but reflects larger concerns within the field about the robustness of psychological effects assumed to be foundational. The controversy revolves around several methodological issues such as sample size, transparent reporting of conditions and participant exclusions, and the "file drawer" problem of non-reporting of null results.

Meta-analyses and large-scale replication attempts have further complicated the picture. While earlier meta-analytic reviews, such as Burke et al. (2010), painted a relatively optimistic view of mortality salience effects, more recent work by Chen et al. (2023) using advanced meta-analytic techniques—like p-curve and z-curve analysis—has raised questions about the heterogeneity of these effects. Chen et al. revealed that while some studies exhibit replicable mortality salience effects, others do not, suggesting that the effect sizes may be smaller and more context-dependent than initially believed. This analysis suggests that prior meta-analyses reporting stronger effects, particularly Burke et al., may have neglected to account for publication bias and small sample sizes.

One reason for this variability may lie in the dual-process defenses proposed by TMT, where individuals employ both proximal (conscious, immediate) and distal (unconscious, delayed) defenses against death-related thoughts. These processes are sensitive to a variety of contextual and individual differences, including cultural factors, personal anxiety-buffering resources, and the specific timing of mortality reminders. Such nuances make it challenging to replicate effects consistently across different laboratories and cultural settings, as even

small deviations in methodology—such as the timing of the mortality salience induction—can lead to vastly different outcomes.

Chen et al. (2023) also highlighted effect heterogeneity, suggesting that mortality salience effects might vary depending on contextual factors, such as cultural worldview, self-esteem levels, and the specific nature of the dependent variables being tested. This suggests that TMT effects are highly context-dependent, and replicating these effects may require more tailored experimental designs that take cultural, historical, and individual variables into account. These findings underscore the importance of acknowledging the context-specificity of prior effects, especially small effects, and pursue conceptual replications that make appropriate adjustments to method rather than rely on exact replications that may obscure the underlying effect. For example, failure to replicate a decades-old study showing mortality salience increasing Americans' patriotism, operationalized as agreement with a pro-America essay, must consider the wording of the essay and its suitability given cultural shifts in attitudes toward the US. From there, replication efforts should focus not on exact replications using potentially outdated materials, but on conceptual replications utilizing materials that are appropriate to the current cultural environment.

Moreover, while these replication challenges have raised valid concerns, they also present opportunities for methodological refinement. Many (e.g., Noah et al. 2018) have argued that replication controversies are most constructive and empirically generative when they are used not to cast doubt on an entire body of work, but rather when they motivate systematically comparison of a failed replication and an original study in order to discover hidden moderators and even refine the original theory.

Discussion

Across accounts reviewed in this chapter, we have seen how routines shape behavior with habitual inertia, persistently leading people to repeat behaviors irrespective of apparent

utility. According to existential theorists, this blind momentum of everyday routines is partly fueled by underlying motives for security and a culturally reinforced sense of personal value.

In sum, these theorists argued that repeating behaviors in domains such as domestic, professional, and social responsibilities provide psychological protection against the threatening awareness of death's inevitability. By persistently enacting behaviors conducive to standards ascribed by one's culture, people can avoid the potential risk and isolation posed by more novel courses of action. In turn, individuals can view themselves as a valued and integral part of something not subject to biological death and decay. Indeed, hundreds of empirical investigations on TMT confirm that people are motivated to invest in a cultural worldview and secure a sense of self-esteem to buffer the potential for existential anxiety. As discussed in the next chapter, a review of the extant TMT literature relating to routines demonstrates that structure, even non-specific structure, is integral to developing and maintaining a cultural worldview.

II. Literature Review

> Routines are ground to stand on, a wall to push up against. We couldn't pull on our bootstraps without it.
>
> —Henry David Thoreau, *The Journal of Henry David Thoreau, 1837–1861*

Thus far, we have observed that everyday actions are not solely the result of conscious deliberation. Existential motives often guide individuals implicitly toward behaviors that either support their cultural worldview and self-esteem or allow them to withdraw from self-awareness. Furthermore, almost half of human behavior can be attributed to the habitual inertia of everyday routines. Given these insights, it is plausible that everyday routines represent a critical domain for terror management research. This chapter aims to build the case for such a connection.

The generally accepted view, developed by pragmatist philosophers (e.g., Dewey, 1922/2015; James, 1890) and supported by empirical research outside of existential psychology (e.g., Dionysiou and Tsoukas, 2013; Howard-Grenville, 2005), sees routines as serving the *explicit* goal of reducing effort toward a transcending purpose. Indeed, this thesis rests partially on the basis that everyday routines can help individuals align with cultural standards, and we will examine this role in the next chapter. However, as previously discussed, the intentions of routine behavior are often *implicit*, and further, routine outcomes are not always optimal for self-esteem nor explicitly related to the cultural worldview. Conceptualizing routines as a fundamental source of structure in everyday life, the following chapter examines literature demonstrating how the awareness of mortality motivates people to seek out and maintain structure in everyday life.

For context, we first discuss the symbolic construction of the cultural worldview and self-esteem and consider the existential benefit of simple, clear, consistent interpretations of the self and everyday experience, even those superficially unrelated to the cultural worldview (Landau et al., 2015). In short, having a structured worldview is crucial to the creation of meaning and the attainment of self -esteem. In the following section, we will review evidence demonstrating that reminders of mortality can motivate people to seek out structure and order in the social world. Finally, we summarize related research highlighting how reminders of mortality motivate people to seek coherent interpretations of the self and everyday experience, and we discuss the implications of these findings as they relate to everyday routines.

Life and Death in a Symbolic World

As discussed in the previous chapter, TMT contends that a core motivation behind human behavior is the psychological need to buffer the potential for anxiety associated with the awareness of personal mortality. People usually satisfy this motive by striving to achieve internalized cultural standards and develop self-esteem. In turn, self-esteem signals that one is a valued member of one's culture and, hence, safe against the prospect of mortality. This sense of psychological security hinges upon the notion that some culturally valued aspect of the self (e.g., soul, children, values, or legacy) will live on after death. An ample body of research testing TMT confirms that reminders of personal mortality increase people's efforts to shore up faith in their worldview and establish self-esteem. However, could these ad-hoc reactions to reminders of mortality be enough to maintain a buffer against the impact of mortality awareness, or is there more to the story?

One limitation of the two psychological constructs that buffer against the impact of mortality awareness—the cultural worldview and self-esteem—is that they are inherently abstract constructs. In his introduction to The Denial of Death (1973), Becker posits that an

individual's self-esteem is symbolically constituted, describing it as, "His cherished narcissism feeds on symbols, on an abstract idea of his own worth, an idea composed of sounds, words, and images, in the air, in the mind, on paper" (p. 3). From a practical perspective, Becker's observation suggests that achieving an enduring sense of personal value based on cultural standards could be ever elusive. Echoing Becker's (1971) earlier emphasis on the significance of everyday actions, recent research in TMT suggests that maintaining one's cultural worldview and self-esteem requires continuous effort to structure life experiences into reliable, predictable patterns (see Greenberg et al., 2013; Swanson & Landau, 2019).

TMT and Structure-Seeking

Recent research suggests that at a fundamental level, faith in one's worldview and self-esteem are supported by the establishment of epistemic structures (see Landau et al., 2015). These cognitive frameworks can be understood as promoting a general conception of the world as orderly and predictable, which is essential in shaping how individuals form knowledge, make predictions, and interact with their environment (see Kruglanski, 1989). In effect, perceiving the world as orderly and predictable fosters a sense of understanding and reliable engagement with the environment, thus creating the potential for self-esteem. Conversely, without these structures, individuals may struggle to maintain faith that the world is a place where enduring personal value can be achieved (see Swanson & Landau, 2019).

If the existential function of epistemic structure holds true, then mortality reminders—which motivate individuals to affirm their worldview and self-esteem—should also increase their preference for well-structured interpretations reality and the self. Further, threatening (or affirming) sources of structure should increase (decrease) the accessibility of death-related thoughts and subsequently moderate defensive reactions to reminders of mortality. Indeed, these two hypotheses are supported by research conducted with diverse samples and wide-

ranging methods (for reviews, see Greenberg et al., 2013; Landau et al., 2015; Landau & Sullivan, 2015; Swanson & Landau, 2019).

Although no prior TMT research exists on routines as a construct, the role of everyday routines is indirectly implicated in a substantial portion of research on TMT and structure seeking. Emblematically, many studies have assessed the effect of mortality salience on structure-seeking by examining the moderating effect of the *personal need for structure* (Thompson et al., 2001).[4] The personal need for structure (PNS) is a construct that describes an individual's desire for order, organization, and clarity in their environment and daily activities. People with a high PNS tend to prefer well-structured, predictable situations and may feel uncomfortable in ambiguous or uncertain situations. Indeed, one of the hallmark behavioral characteristics of high PNS individuals is an increased tendency to establish and enjoy routines (Neuberg & Newsom, 1993).

Routines and Structure

Cause and Effect

From a less morbid perspective, TMT posits that individuals are driven by the need to perceive the world as a meaningful place—where events occur for a reason, people generally receive their just deserts, and there is a clear order to actions and outcomes. As Becker (1964) articulates, meaning serves as an "elaboration of an increasingly intricate ground plan of broad relationships and ramifications" (p. 113), fostering engagement, commitment, and the pursuit of personal goals, a process referred to as everyday meaning-making (also see Wong, 1998). Correspondingly, research across various domains of behavior and mental health has shown that routines help establish and reinforce cause-and-effect relationships, thus promoting this sense of order (Becker & Knudsen, 2005; Landry, 2010).

[4] At present (March 2024), over 50 peer-reviewed studies testing the moderating effect of PNS on the effects of mortality salience can be readily found in an online search. Half of the studies reviewed in this chapter examine this moderating effect.

Consider the routine of drinking coffee in the morning. This behavior may seem like merely a simple preference or habit. However, at a deeper level, this routine reinforces dependable cause-and-effect relationships. For example, drinking coffee establishes a predictable link between consuming caffeine and experiencing increased alertness and energy. This predictable boost can enhance an individual's ability to perform effectively at work and manage daily responsibilities. In this way, the seemingly mundane act of drinking coffee may contribute to a sense of control and stability, providing an anchor of predictability in an otherwise unpredictable world. Such routines not only help manage physical energy but also support psychological stability by reinforcing a sense of order and predictability, which is essential for coping with the awareness of mortality. Conversely, without this sense of cause and effect, people may not be motivated to stumble out of bed to the coffee pot each morning. Instead, echoing the existentialist perspective of Albert Camus, individuals might view the behavior as meaningless or absurd. Indeed, although people may not consciously think about it, their two cups of coffee every morning are a source of everyday meaning-making, supporting the notion that intentional actions have intended effects.

If the above account is accurate, people might be motivated to see cause-and-effect relationships throughout their everyday experiences. Thus, even if one drinks two cups of coffee every morning, it should be existentially comforting to imagine that one drank two cups of coffee *this* morning because one has an important meeting. Landau and colleagues (2009) tested a similar idea. They hypothesized that mortality salience would increase the tendency to view one’s experiences (e.g., drinking coffee and taking an important meeting) as causally linked, especially those dispositionally high in the need for structure (PNS; Thompson et al., 2001).

The resulting study was conducted exclusively during evening hours. After participants were exposed to mortality reminders or a control priming uncertainty, they were

asked to write a personal journal entry about their day (hence the evening hours). To test their hypothesis, researchers analyzed journal entries for the prevalence of cause-and-effect related words (e.g., "because") using the Linguistic Inquiry and Word Count software (Pennebaker et al., 2001). Results showed mortality salience led people high in PNS, but not those low in PNS, to use a greater proportion of causal words in their journal entries. This finding suggests that people, especially those high in PNS (with a marked preference for routines), may lean upon the cause-and-effect relationships of everyday life to provide a critical sense of coherence and uphold a meaning-conferring cultural worldview. Thus, because everyday routines encompass predictable cause-and-effect relationships (Banovic et al., 2016; Eagle & Pentland, 2019), everyday routines may also contribute to faith in a meaning-conferring cultural worldview.

Higher-Level Meaning

From a TMT perspective, individual differences such as PNS partly reflect the various sources of meaning individuals invest in to manage the impact of mortality awareness (Solomon et al., 1991). While not everyone is dispositionally high in the personal need for structure, TMT upholds that everyone invests in sources of meaning, and this investment should fundamentally guide interpretations of everyday actions. Thus, individuals who are not high in PNS should still be motivated to interpret their routine actions in a meaningful way. Indeed, the following study suggests that people have a fundamental motivation to interpret routine actions as meaningful.

Drawing on Vallacher and Wegner's (1987) action identity theory, Landau et al. (2011; Study 1) observe that people can lend meaning to mundane actions by viewing them relative to superordinate goals that provide higher-level meaning (i.e., high-level action identity) rather than merely as physical actions (i.e., low-level action identity). For instance, having coffee can be described as having a low-level action identity, e.g., sipping from a cup

or mug. However, having coffee may also be described with a high-level action identity, e.g., recovering from a rough night or fueling up for a big day, actions that implicate a broader and more meaningful process. The authors proposed that viewing specific actions with a high-level action identity can buffer against the impact of mortality awareness, and so they hypothesized that mortality salience should increase participants' preference for high-level interpretations of everyday actions.

Following a mortality salience manipulation, participants completed the Behavioral Identification Form (BIF; Vallacher & Wegner, 1989) as a dependent variable. The BIF presents 25 routine behaviors and asks participants to choose which one of two descriptions they believe is more appropriate to describe each behavior. For each item, one description was at a lower level of action identification, and the other was at a high level. For example, participants chose whether "Cleaning the house" is best described as "Vacuuming the floor" (low-level) or "Showing one's cleanliness" (high-level). Many items in the BIF constituted routine actions that participants likely engaged in (e.g., locking a door, eating, washing clothes).

Results showed that participants who completed a subtle mortality salience induction (i.e., a death-related word puzzle vs. a neutral word puzzle) selected more high-level action identities. In effect, mortality reminders led participants to endorse more high-level (fewer low-level) identifications of actions they likely performed routinely in their everyday lives. Thus, it was found that mortality reminders motivate people to imbue routine actions with meaning. This finding suggests that the actions that comprise an individual's everyday routines can take on a more profound significance when mortality is salient.

However, Landau et al.'s (2011; Study 1) finding does not suggest that people see routine behaviors as meaningless until explicitly reminded of their mortality. On the contrary, sociology and cultural psychology perspectives suggest that people use, search, and construct

meaning ceaselessly (e.g., Berger & Luckmann, 1967; Shweder, 1991). These perspectives are consistent with TMT. From a TMT perspective, mortality concerns implicitly guide everyday behavior to uphold faith that the world is meaningful and that one is meeting or exceeding the standards for what is meaningful (Greenberg et al., 1990). If this notion is true, then people should be motivated to view their routines as meaningful, even without the explicit provocation of mortality reminders.

As it happens, a study by Heintzelman and King (2019) suggests that people may experience an increased sense of meaning when carrying out their everyday routines. Using real-time experience sampling methods, Heintzelman and King (2019) prompted participants (via a smartphone app) on six semi-random occasions each day for seven days (42 prompts total) to complete a brief survey assessing momentary routineness and meaning in life, on the spot. Specifically, the survey first assessed the extent to which participants' current behavior was routine. Following the routine assessment, participants completed the Presence of Meaning subscale of the Meaning in Life Questionnaire (Steger et al., 2006). Results showed that the degree to which participants' current, naturally occurring behavior followed a typical routine positively related to momentary feelings of meaning in life. Thus, people may experience an increased sense of meaning when carrying out their everyday routines, even without explicit reminders of mortality. This finding reinforces that routines can serve as structures that help individuals establish meaningful connections between their everyday behaviors and higher-level sources of meaning.

Personal Goals

Prior research has shown that personal goals can motivate repetition, leading to habits (see Wood et al., 2021), promote exposure to cues that trigger habits (see Neal et al., 2006), and be inferred from habits (see Wood & Neal, 2007). Notably, people may perceive their routines as guided by personal goals, even when entailing actions have become automatic

(see Neal et al., 2012). In line with these findings, perspectives on self-regulation suggest that people make sense of their everyday behaviors by framing them as part of their abstract, long-term goal pursuits (e.g., Wegner et al., 1986). Building on these tenets, Landau et al. (2011; Study 2) reasoned that construing mundane actions as substantively tied to one's long-term goals can support a conception of one's life as meaningful (cf. Ryff & Singer, 1998) and thus affirm one's symbolic defenses against the awareness of mortality.

Landau et al. (2011) hypothesized that mortality reminders would heighten people's tendency to perceive more meaningful connections (i.e., increased coherence) between their current schedule and personally established goals for the distant future. In their study, participants were asked to list the goals they hoped to achieve within 40 years and their scheduled activities for the upcoming week. Then, after exposure to mortality reminders (or an aversive control topic), participants were asked to evaluate their scheduled activities based on their long-term goals and indicate any *meaningful connections* (i.e., coherence). Results showed that, as predicted, participants exposed to mortality reminders connected more of their scheduled actions for the coming week to long-term personal goals. These findings suggest that coherence between routine actions and long-term goals may assuage concerns over personal mortality.

Consistency and Identity

Prior research suggests that everyday routines can promote a consistent interpretation of the self and others in various ways. For example, routines can enable individuals to anticipate and predict others' behavior, facilitating a better understanding of themselves and others (for a review, see Fiese et al., 2002). By engaging in routine activities with others, individuals can develop a shared understanding of how they should behave and interact with each other, reinforcing consistency in their interpretation of themselves and others. Further, everyday routines can connect an individual's past experiences with their present

circumstances, promoting a sense of continuity and coherence in their self-concept (Ludwig, 1997). As we will next discuss, the ability to form consistent interpretations of the self and others may help some individuals manage concerns over personal mortality.

Landau et al. (2009) were interested in how mortality concerns motivate people to form consistent self-interpretations. Although individuals can possess a wide range of self-descriptions contingent upon varying social contexts (Markus & Kunda, 1986), a coherent self-concept reduces the risk of self-contradictions that may hinder the attainment of symbolic immortality. Landau et al. (2009) studied the effects of mortality salience on clarity and coherence of the self-concept, finding that individuals high (but not low) in PNS prefer coherent, clearly defined, and simply organized self-characteristics. Mortality reminders also led high PNS individuals to seek meaningful connections between past events and their current selves. Thus, mortality concerns motivated high PNS individuals to seek a more consistent and coherent self-concept. In the current perspective, everyday routines can be viewed as a practical tool for promoting consistency and coherence in one's self-concept (Ludwig, 1997).

Indeed, consistent interpretations of others might also assuage mortality concerns. Landau et al. (2004) reasoned that consistent interpretations of others might contribute to faith in an orderly and stable worldview. So, they hypothesized that mortality reminders would lead people to show a primacy effect in their evaluations of others by relying more heavily on the first impression they receive and discounting later conflicting information. To test this hypothesis, they asked participants to read two opposing descriptions of a fictional male character (Jim), counterbalanced in order: one description cast him as introverted, the other as extraverted (e.g., Luchins, 1957). Following the descriptions, participants were asked to evaluate Jim's sociability on an introversion/extroversion scale (adapted for target evaluation; Eysenck and Eysenck,1964).

The results indicated that participants exposed to mortality reminders were more likely to evaluate Jim's sociability based on the first description they read, even if a subsequent description contradicted it. This finding supports the notion that terror management motivation underlies a preference for coherent interpretations of others. In other words, people are motivated to perceive others as acting consistently, as inconsistency makes it difficult to form coherent social interpretations. Furthermore, by promoting consistent behavior in stable contexts, everyday routines may facilitate coherent social interpretations (Fiese et al., 2002).

In summary, clear, and consistent interpretations of the self and others play a role in managing mortality concerns (Landau et al., 2004, 2009). Moreover, additional evidence suggests that routines may be a practical tool for promoting clear and consistent interpretations of the self and others (Fiese et al., 2002; Ludwig, 1997). Thus, everyday routines may be comforting when mortality is salient, particularly for those who lack clear and coherent interpretations of the self and others.

Discussion

Throughout this chapter, we have reviewed and discussed indirect evidence supporting the proposed role of everyday routines in managing the potential for existential anxiety at a fundamental level. In sum, these findings provide empirical support for the basic premise of an existential perspective on everyday routines, namely, that concerns over personal mortality motivate people to perceive everyday actions (e.g., having coffee or mopping the kitchen floor) as consistent and meaningfully connected (i.e., coherent) with broader goals, whether hypothetical or a part of one's current day or plans for the distant future. Underlying these effects, TMT suggests that, by supporting perceptions of the world as comprehensible and orderly, coherent everyday actions make the path to fulfilling a meaning-conferring cultural worldview (and achieving self-esteem) seem navigable.

Although the extant literature provides a rich account of how mortality concerns motivate people to cognitively structure everyday actions to support faith in a meaning-conferring cultural worldview, no preceding work has examined whether the fundamental structures of everyday actions (i.e., everyday routines) can protect against mortality concerns.

The inherent structure of everyday routines is demonstrated in the regular, persistent repetition of behaviors within a stable context (e.g., Ouellette & Wood, 1998). This repetition and subsequent habitual control distinguish everyday routines from other everyday actions and confer everyday routines with significant implications for supporting a sense of structure and for developing and maintaining faith in a cultural worldview. Building on these insights, the next chapter will explore research that examines the effects of routines as behavioral manifestations of the need for structure and discusses their implications for TMT. In culmination, the chapter presents a general model of how everyday routines might serve to buffer the impact of mortality awareness and explores the factors that may influence and moderate the relationship between everyday routines and TMT's cultural anxiety buffer.

III. The Routine Terror Management Model

In the last chapter, we explored the notion that terror management motivation fuels structure-seeking, and we reviewed evidence suggesting that this effect extends to the mundane details of everyday life. This chapter builds upon the extant literature to investigate one source of structure in everyday life (i.e., everyday routines) and its function in supporting terror management. The routine terror management (RTM) model presented in this chapter provides a working framework for organizing existing social psychological research that builds a case for the principal roles of everyday routines in terror management, identifies gaps in our understanding, and suggests avenues for future research.

Although routines have enjoyed a rich history of analyses within existential philosophy, routines, as a construct, are unexplored territory for empirical research on TMT. So, where do classical perspectives on routines align with the empirically supported theory? Although the existentialists varied in their ultimate conclusions about routines, they all argued that the harsh realities of the human experience compelled people toward routines for a sense of psychological security (e.g., Becker, 1973; Camus, 1942/2018; Fromm, 1956; Heidegger, 1927/2010, Kierkegaard, (1849/1997a). As we will discuss, this proposition is consistent with the basis for TMT's conceptualization of terror management.

TMT posits that the fear of mortality is a fundamental and pervasive reality of the human experience and that people have a psychological need to manage this fear (i.e., terror management; Solomon et al., 1991). One fundamental tenet of TMT is that an individual's ability to cope with the fear of mortality hinges on an implicit connection between personal value and security (Solomon et al., 1991). Greenberg et al. (1997) explain that as individuals experience the world, their experience is embedded within the context of parental (and eventually cultural) authority, and so one's sense of safety in the world becomes increasingly contingent upon meeting parental (and eventually cultural) standards of value. In practical

terms, this means that people hold an implicit belief that being valued equates to being protected and thus safe. From a general view, TMT suggests that cultural standards provide a framework for achieving personal value (i.e., self-esteem), which buffers the impact of mortality awareness. Looking more closely, one can see that central to this buffering function is a sense of safety. In short, self-esteem buffers the impact of mortality awareness because it signals the individual's safety within a greater cultural context.

The RTM model is predicated on two key assumptions. First, the structured and familiar context provided by an individual's everyday routines promotes a sense of safety (or security), offering protection against mortality awareness. This assumption suggests that daily routines create a "bubble" of psychological security. The second assumption focuses on the broader impacts of routines, specifically how routines that align behavior with cultural standards can bolster self-esteem and offer protection from mortality awareness beyond this "bubble." The subsequent sections review the evidence backing these assumptions and outline the RTM model's essential predictions.

The Proposed Structural Role

As previously discussed, existential philosophers posited that people are drawn to the structure and predictability of everyday routines for a sense of security (e.g., Becker, 1973; Camus, 1942/2018; Fromm, 1956; Heidegger, 1927/2010; Kierkegaard, 1849/1997a). Building on Becker's (1962) assertion that safety (vs. self-esteem) is "the other crucial function" (p. 83) of the cultural anxiety buffer, Greenberg et al. (1997) suggest that a desire for safety is at the core of TMT. Although this thesis is the first to examine routine's role in terror management, prior research has examined the influence of routines on feelings of safety. For example, Avni-Babad (2011) proposed that feelings of safety associated with routines may develop due to the mere exposure effect (Zajonc, 1968, 1998, 2000, 2001). In line with Zajonc's concept of mere exposure, the researcher reasoned that if familiarity

decreases fear and avoidance and increases security and positive affect, routines should do the same. In a series of studies, Avni-Babad (2011) measured the routineness (frequency and consistency) of participants' behavior in uncontrolled environments (i.e., on flights and in unfamiliar neighborhoods) and controlled environments (i.e., in a classroom and a laboratory) and found that participants reported more feelings of safety, confidence, and well-being in routine situations. In sum, Avni-Babad's findings are consistent with the RTM model's assumption that routines support a sense of safety, which Greenberg et al. (1997) suggest is at the core of terror management.

Feelings of safety may partly result from skills developed through the repetition of routines. For example, as individuals become familiar with a particular route home, they become more aware of impending obstacles and more skilled at navigating the route. Such skills obtained through repeat experience promote confidence and feelings of safety conceivably because they mitigate danger on a practical level. However, while more frequent flyers do not possess any additional skills to mitigate the dangers of air travel, Avni-Babad's (2011) results demonstrate that people who routinely travel by air develop feelings of safety and confidence while flying. In conclusion, the feelings of safety derived from routines may partly result from increased skill for mitigating danger but, in some cases, may extend from familiarity (or mere exposure) alone.

While Avni-Babad's (2011) studies link routines to general feelings of safety, other studies suggest that routines can promote another sense of psychological security, protecting people from affective personal judgments that might harm self-esteem (see Levine et al., 1994). For example, Kahneman and Miller (1986) investigated the connection between routine acts (vs. novel acts) and personal judgments. Their work demonstrated that novel acts (i.e., exceptions to routine) elicit more affective judgments than routine acts, even when the

outcomes of both acts (novel and routine) are the same. As we will discuss, their findings suggest that routine behaviors are generally considered less risky and thus blameless.

In one study, participants presumed an accident victim who took a novel route home would be more upset than an accident victim who took a routine route home. In another study depicting two people who were each robbed by hitchhikers, participants reported that the victim described as never picking up hitchhikers would feel more regretful than the victim described as routinely picking up hitchhikers. In these examples, participants presumed that individuals performing a routine (vs. novel act) would feel less upset and less regretful of adverse outcomes. The authors concluded that novel or exceptional acts evoke thoughts of contrasting routine alternatives but not vice versa. Instead, routines tend to mute thoughts of contrasting novel or exceptional alternatives. These findings suggest that actions carried out within the context of one's routines are protected from affective personal judgments when facing potentially adverse outcomes.

Moreover, complimentary findings from TMT research are consistent with the notion that reminders of mortality can motivate people to seek out familiar and psychologically safe contexts like those of everyday routines. For example, previous research has shown that mortality salience can decrease exploration (Routledge et al., 2010) and increase risk aversion (in self-esteem-relevant decisions; Landau & Greenberg, 2006). Notably, these tendencies toward safety and familiarity have been observed predominantly in individuals lower in self-esteem—who, as TMT posits, are more vulnerable to mortality concerns (Greenberg et al., 1992)—rather than those higher in self-esteem, who possess more robust defenses against the awareness of mortality.

Individual Differences in Self-Esteem

A broad base of research demonstrates the role of individual differences in terror management (e.g., Greenberg et al., 1992; Mikulincer & Florian, 2000; Vess et al., 2009),

and particularly relevant to routines in the current perspective is the moderating role of self-esteem (e.g., Harmon-Jones et al., 1997; Juhl & Routledge, 2014; Wisman & Goldenberg, 2015). As previously discussed, self-esteem reflects the extent to which an individual feels valued and thus safe and protected against the prospect of mortality (Greenberg et al.,1997). As we will describe below, while people lower in self-esteem lack this sense of psychological security and are especially likely to seek the protection of familiar routines when mortality is salient, people high in self-esteem may not.

Research has consistently demonstrated that individuals lower in self-esteem lack the psychological protection needed when faced with the awareness of mortality, leading to increased defensiveness and psychological maladjustment when mortality is salient (e.g., Abeyta et al., 2014; Routledge et al., 2010; Wisman et al., 2015). Moreover, this lack of psychological protection against the awareness of mortality can significantly influence how individuals lower in self-esteem perceive their ability to cope with the challenges of everyday life. For instance, among those low in self-esteem, reminders of mortality have been linked to reports of decreased subjective vitality (Routledge et al., 2010; see Ryan & Frederick, 1997) and decreased hope for achieving desired outcomes (Wisman & Heflick, 2016). It stands to reason that when mortality is salient, individuals low in self-esteem may actively seek ways to restore a critical sense that they can cope with the challenges of everyday life. Here, everyday routines offer a potential solution. These routines help conserve energy, preserve cognitive resources, and create a sense of predictability while reducing the perception of threats (Dunn, 2000). In sum, this body of research suggests that individuals lower in self-esteem may be especially likely to seek the protection of familiar routines when mortality is salient.

In contrast, some studies suggest that individuals high in self-esteem may not be as likely to seek the protection of familiar routines when mortality is salient. For example,

Landau and Greenberg (2006) tested how reminders of mortality can lead to different safety-seeking behaviors based on an individual's level of self-esteem. The authors proposed that when individuals face situations relevant to their self-esteem, they can either adopt a low-risk/low-payoff strategy to protect against failure or choose a high-risk/high-payoff option to strive for success (e.g., Atkinson, 1957; Josephs et al., 1992; for a review, see Larrick, 1993). Accordingly, the authors hypothesized that reminders of mortality would prompt low self-esteem participants to "play it safe" or become more risk-averse in decision-making, while high self-esteem participants would opt for the high-risk/high-payoff option.

To test their hypothesis, Landau and Greenberg (2006) conducted two studies presenting participants with a standard mortality salience manipulation (e.g., Greenberg et al., 1994) followed by a self-esteem-relevant decision-making scenario. Specifically, researchers asked participants to imagine giving a commencement speech at their college graduation and having to choose between two jokes: Joke A (high payoff/high risk), described as hilarious and touching if successful but with a high risk of failure, or Joke B (low payoff/low risk), described as less impressive but with a 100% likelihood of success. In 10 trials, they then asked participants to choose between the two options. The likelihood of success for the high-risk option decreased with each trial, while the low-risk option always had a 100% chance of success. Thus, the researchers assessed participants' willingness to take risks following a mortality reminder in a self-esteem-relevant decision-making task.

Results showed that while participants low in self-esteem preferred the low-payoff/low-risk option, reminders of mortality motivated participants high in self-esteem to pursue the high-payoff/high-risk alternative despite an increasingly elevated risk of failure. Furthermore, the introduction of a self-affirmation prime in the second study diminished this risk-taking effect among participants high in self-esteem, suggesting that individuals high in self-esteem may see risk-taking as a form of self-enhancement.

Finally, to enhance ecological validity relative to the hypothetical scenario used in the first two studies, Landau and Greenberg (2006) conducted a third study involving an actual self-esteem-relevant decision-making task. Researchers gave participants instructions and materials for an ostensibly real creative intelligence test. The test involved coloring in a geometric pattern with some spaces numbered for specific colors and other spaces unnumbered and open for creativity. Results showed that reminders of mortality motivated individuals low in self-esteem to be more risk-averse in their creative decisions for the unnumbered spaces. In contrast, reminders of mortality motivated individuals high in self-esteem to make riskier creative decisions for the unnumbered spaces. Taken together, Landau and Greenberg's (2006) findings highlight the complex interplay between reminders of mortality and self-esteem in shaping safety-seeking behavior. While mortality reminders may motivate individuals low in self-esteem to prioritize psychological security, those high in self-esteem may embrace risk-taking for a higher payoff when confronted with reminders of mortality. Further, as we will review, one study suggests that the interplay between mortality reminders and self-esteem could lead high self-esteem individuals to seek higher payoffs, even at the risk of physical safety.

In another study, Taubman-Ben-Ari and Findler (2006) explored the influence of mortality reminders on motivation for military service, specifically focusing on the moderating role of self-esteem. The authors hypothesized that reminders of mortality would increase motivation for military service, as serving in the army is associated with high social status, prestige, and personal growth opportunities, which can enhance the self-concept among young people (see Izraeli, 1997; Seginer, 1999). The authors predicted that this effect would be specific to individuals high in self-esteem, who are more likely to perceive military service as an opportunity to enhance their self-esteem and affirm their competence.

To test their hypothesis, Taubman-Ben-Ari and Findler (2006) recruited a sample of young men awaiting compulsory enlistment in the Israeli military. Participants were randomly assigned to either a mortality salience condition or a control condition (e.g., Rosenblatt et al., 1989). After the mortality salience manipulation, participants completed a scale assessing their motivation to serve in the army and a separate scale assessing their anticipation of physical and mental hardships. Results showed that mortality salience increased motivation for military service among individuals high in self-esteem but not those low in self-esteem. Furthermore, participants high in self-esteem exposed to mortality salience reported greater anticipation of physical hardships associated with military service.

In contrast, participants low in self-esteem did not show any significant changes in their motivation or anticipation of hardships. Taubman-Ben-Ari and Findler's (2006) findings support the notion that reminders of personal mortality may lead individuals high in self-esteem to embrace higher-risk opportunities for testing their abilities and competence, even at the cost of physical safety. These findings are consistent with Landau & Greenberg's (2006) studies demonstrating that mortality reminders motivate individuals high in self-esteem (and not those low in self-esteem) to seek opportunities for significance despite a risk of failure.

Based on the available evidence, individuals low in self-esteem (seeking psychological security) may cling to familiar routines when mortality is salient. In contrast, individuals high in self-esteem (seeking self-enhancement) may be motivated to reach beyond familiar routines when mortality is salient. Indeed, prior research has shown that people tend to evaluate routine (vs. novel) stimuli more positively when focusing on security (vs. growth) and vice versa (Gillebaart et al., 2012). Consequently, we propose that engaging in familiar everyday routines can buffer against mortality concerns, with this protective mechanism particularly pronounced for individuals low in self-esteem. Conversely, those

high in self-esteem might seek self-enhancement by venturing beyond their routines when mortality is salient.

The Proposed Cultural Role

As previously mentioned, routines make up a sizable portion of everyday behavior. Real-time experience sampling studies have shown that approximately 45% of human activities occur nearly daily and often in the same location (Quinn & Wood, 2005; Wood et al., 2002). In the previous section, we discussed how this frequent repetition and heightened familiarity can create a context or "bubble" of psychological security to shield against mortality concerns. However, not all routines may extend this psychological protection to broader contexts. In the upcoming section, we explore how the consequences of an individual's everyday routines can have a far-reaching impact, influencing an individual's ability to cope with mortality concerns beyond the confines of one's "bubble."

TMT argues that people manage the awareness of personal mortality (and avoid mortal terror) by developing and maintaining a psychological defense system composed of a cultural worldview and self-esteem (Pyszczynski et al., 1999). As a psychological defense against mortality awareness, people develop an individualized version of the standards and values espoused in their culture (i.e., their individualized worldview) and attempt to live by those standards and values. This personal investment in the worldview assures that some aspect of the self (e.g., soul, children, values, or legacy) will live on after death. TMT holds that successful investment in the individualized cultural worldview is reflected in a sense of self-esteem or the feeling that one is a valued contributor to a meaningful world (see Pyszczynski et al., 2004). Although a large body of research investigates the role of self-esteem in terror management, the extant literature has overlooked the more direct approach of investigating the persistent behavioral patterns that constitute an individual's investment in the cultural worldview: the adaptive routines of everyday life.

Adaptive Routines and Cultural Standards

TMT suggests that behaviors conducive to meeting the values and standards of the cultural worldview should support self-esteem and protect against mortality concerns. Such behaviors, from a TMT perspective, are considered adaptive. This description of adaptive behaviors mirrors mainstream definitions. For example, the American Psychological Association defines adaptive behavior as "the level of everyday performance of tasks that is required for a person to fulfill typical roles in society, including maintaining independence and meeting cultural expectations regarding personal and social responsibility" (VandenBos, 2007, p. 18). Accordingly, routines conducive to cultural standards in personal health, domestic/household, and work/school domains (among others) are considered adaptive (Gallimore & Lopez, 2002).

Traditional theories in behavioral psychology suggest that routines develop through the reinforcement of actions that lead to socially desired outcomes, incentivizing individuals to repeat behaviors that garner social approval (e.g., Pavlov, 1928/1968; Skinner, 1938). Extending this perspective, recent research suggests that personal goals can drive repetition, leading to habit formation (Wood et al., 2021). Additionally, an individual's personal goals can promote exposure to contextual cues that trigger habits (see Neal et al., 2006; cf. Bargh et al., 2001). Indeed, personal goals and habits are so intertwined that an individual's goals can often be inferred from their habits (Wood & Neal, 2007). Moreover, people tend to view their routines as goal-oriented, even after associated actions have become automatic (see Neal et al., 2012). In sum, perspectives on habit and routine formation suggest that adaptive everyday routines comprise behaviors that align with an individual's goals within a broader context of cultural standards (see Wood & Quinn, 2005 for review). TMT suggests that greater alignment with one's values and internalized standards (i.e., the individualized worldview) manifests symbolically in higher self-esteem. Integrating these insights reveals that an

individual's adaptive routines reflect a pursuit of personal goals, which align with their individualized cultural worldview. This alignment, in turn, supports the development and maintenance of self-esteem.

Adaptive Routines and Self-Esteem

Indirect evidence further underscores the role of adaptive routines in bolstering self-esteem. For instance, prior studies have linked adaptive routines to outcomes that contribute positively to self-esteem, such as improved academic performance and workplace productivity (Lu et al., 2022; Fiese et al., 2002). Similarly, a robust connection has been observed between adaptive routines and family dynamics, where routines correlate with greater marital satisfaction (Spagnola & Fiese, 2007), reduced maternal distress (Leiferman et al., 2005), and the mitigation of family stress (Fiese et al., 2002). Beyond family health, engaging in adaptive routines has shown benefits in enhancing social-emotional and behavioral functioning (Baldridge, 2011) and in diminishing risk factors in children (Yoo et al., 2010; Ivanova & Israel, 2006; Rijlaarsdam et al., 2016). The positive implications of these outcomes for self-esteem have been well-documented (Alves-Martins et al., 2002; Donnellan et al., 2005; Shackelford, 2001; Rector & Roger, 1997). Therefore, substantial indirect evidence supports the positive relationship between adaptive routines and self-esteem across personal health, family, and professional/educational domains.

In addition, numerous studies have explicitly explored the link between adaptive routines, their beneficial outcomes, and self-esteem. For example, adaptive study routines have shown a positive association with both academic achievement and self-esteem (Islam, 2021). Adaptive health routines, such as regular sleep and exercise patterns, have been linked to better overall health and higher self-esteem (Hudd et al., 2000). A positive association has also been found between healthy eating habits, including regularly consuming fruits and vegetables, maintaining a positive body image, and self-esteem (Hoare & Cosgrove, 1998;

Kristjánsson et al., 2010). This direct evidence supports the notion of a beneficial relationship between adaptive routines and self-esteem, especially in areas related to academic performance and personal health.

Collectively, both direct and indirect findings align with the RTM-based premise that adaptive routines serve to align behavior with the individualized cultural worldview, thereby bolstering self-esteem. According to TMT, self-esteem acts as a crucial buffer against existential anxiety, which arises from the awareness of personal mortality. Therefore, when viewed through the lens of TMT, this collection of evidence suggests that adaptive everyday routines should effectively bolster self-esteem and mitigate the psychological impact of mortality awareness.

Deficiencies in Adaptive Routines

However, not everyone is sufficient in adaptive routines. Accordingly, some individuals lack the persistent behavioral patterns necessary to meet cultural standards in personal health, domestic/household, and professional/educational domains (among others). Although research on deficiencies in adaptive routines is limited, the effects of a persistent lack of adaptive behavior on achieving cultural standards and self-esteem are well-documented. For example, low self-esteem and a persistent failure to adapt have been linked to poor academic performance (Baldridge, 2011), early onset obesity (French et al., 1995), juvenile delinquency (e.g., Trzesniewski et al., 2006), and poor job performance (e.g., Salmela-Aro & Nurmi, 2007).

At its core, TMT suggests that individuals use cultural worldviews and self-esteem as shields against the impact of mortality awareness. However, this protective mechanism may falter when individuals fail to meet cultural standards due to a lack of adaptive routines. A deficit in adaptive routines may hinder the accomplishment of personal goals (see De Ridder & Gillebaart, 2017), eroding foundational confidence in one's cultural worldview and

heightening vulnerability to mortality awareness (Wisman et al., 2015; cf. Wisman, 2006). Since adherence to cultural standards is equated with self-esteem, failure to meet cultural standards may further amplify vulnerability to mortality awareness (see Pyszczynski et al., 2004). Consequently, a decline in both defenses could leave individuals increasingly prone to existential anxiety.

In sum, the evidence reviewed in this chapter suggests that adaptive routines can function as effective anchors, aligning individuals with their cultural standards, supporting self-esteem, and fortifying their psychological buffer against the impact of mortality awareness. Conversely, by potentially stalling the achievement of cultural standards, a lack of adaptive routines may erode this buffer, leaving individuals more exposed to the unsettling awareness of personal mortality.

Recognizing and addressing deficiencies in adaptive routines, therefore, not only holds the potential to mitigate these adverse outcomes but also to restore and enhance the individual's protective mechanisms against existential anxiety. Interventions aimed at developing adaptive routines could serve as vital components in supporting individuals to align more closely with cultural standards, bolster self-esteem, and reinforce their psychological defenses against the awareness of mortality.

Discussion

Rooted in the expansive framework of TMT, the RTM model introduces the concept that everyday routines, an area yet to be explored in empirical TMT research, are crucial in how individuals grapple with the awareness of personal mortality. Drawing from existential theorists who suggest that routines provide refuge from the harsh realities of existence, the RTM model extends TMT's proposition that people are drawn to familiar structures and cultural worldviews to buffer the impact of mortality awareness. In this context, routines can provide individuals with vital structure and align their behavior with their individualized

cultural worldview, serving as essential mechanisms for terror management. However, according to the RTM model, not all routines fulfill both the structural and cultural functions of terror management.

The structured and predictable context of familiar routines creates a “bubble” of psychological security, offering solace for those whose self-esteem does not adequately shield them from mortality concerns. Critically, the cultural adaptiveness of these routines plays a pivotal role in their effectiveness. Adaptive routines that uphold cultural standards can reinforce an individual’s self-esteem and extend a protective shield against mortality awareness, transcending the limited context of the bubble. In contrast, an absence of adaptive routines can undermine self-esteem, leaving individuals more vulnerable to the impact of mortality awareness. The RTM model, therefore, invites researchers to delve into the intricate dynamics between everyday routines, self-esteem, and mortality awareness, calling for a detailed exploration of the everyday routines that fortify or weaken individuals’ existential defenses.

IV: Keep Calm and Carry On

Mortality, Self-Esteem, and the Psychological Security of Everyday Routines

Abstract

Grounded in the routine terror management model (RTM), this chapter explores the protective role of everyday routines against the psychological impact of mortality awareness, with a focus on the moderating effect of self-esteem. We conducted three experimental studies to test our hypothesis that everyday routines can mitigate the impact of mortality awareness, particularly for individuals lower in self-esteem. In Study 1, after exposure to mortality reminders, participants lower in self-esteem (1 *SD* below the mean) found their everyday routines more appealing, while those higher in self-esteem (1 *SD* above the mean) showed the opposite response. Study 2 extended these findings by showing that after exposure to mortality reminders, the salience of participants' everyday routines significantly reduced death-thought accessibility (DTA) in participants lower in self-esteem, an effect not observed in their higher self-esteem counterparts. Lastly, Study 3 revealed that participants lower in self-esteem expressed less openness to changing their routines following mortality reminders, while those higher in self-esteem were no less open to routine change after mortality reminders. Our findings shed light on the role of everyday routines in coping with the awareness of personal mortality, especially among those lower in self-esteem. This chapter concludes with a discussion on the implications of these findings for understanding the relationships between everyday routines, self-esteem, and terror management, paving the way for future research in this area.

Introduction

> Like many prisoners, they [humans] are comfortable in their limited and protected routines, and the idea of a parole into the wide world of chance, accident, and choice terrifies them.
>
> —Ernest Becker, *The Denial of Death*

Cultural anthropologist Ernest Becker argued that to cope with the awareness of personal mortality, an individual must feel safe, and for one to feel safe, "action has to be dependable and predictable" (1971, p. 83). Becker (1973) further observed that individuals often find a sense of psychological security in the routines of everyday life. According to Becker, these routines are conducive to psychological security because they provide structure, predictability, and order in an otherwise uncertain and chaotic world (also see Ch. II of this thesis). On another level, routines can bolster confidence in everyday actions by offering a narrower range of choices and possibilities. In a world with limitless options, individuals may feel overwhelmed, anxious, and uncertain about which path to choose (cf. Markus & Schwartz, 2010). According to Becker, although the inherent uncertainty of everyday choices can exacerbate concerns over personal mortality, everyday routines allow people to "live automatically and uncritically" through pre-deliberated courses of action (1973, p. 87). However, Becker's propositions on everyday routines have thus far remained untested.

TMT and the RTM Model

Building on the work of Ernest Becker, terror management theory (TMT; Greenberg et al., 1986) proposes that people cope with the awareness of personal mortality by investing in a cultural worldview, internalizing its standards, and building their lives around achieving

those standards. By meeting or exceeding internalized cultural standards, people develop a sense that they are valued members of their culture (i.e., self-esteem), which imparts a sense of psychological security that buffers against the potentially overwhelming anxiety associated with the awareness of mortality (Rothschild et al., 2019, p. 180). TMT proposes that this psychological buffer can be highly symbolic. For example, an individual's buffer can rest partially on the belief that some part of oneself, such as one's soul, children, values, or legacy, will endure beyond death (see Pyszczynski et al., 2004). However, as Becker (1973) first argued, one's psychological buffer must also be grounded in more concrete conceptions of the world as orderly and predictable (cf. Landau et al., 2015). In practical terms, the experience of reliable cause-and-effect relationships in everyday life enables the belief that one can survive, effect change in one's environment, and achieve a sense of enduring value (for discussion and review, see Swanson & Landau, 2019). Indeed, from a general view, TMT suggests that the achievement of internalized cultural standards leads to a sense of enduring value, which buffers against the impact of mortality awareness (for review, see Burke et al., 2010). However, at a more fundamental level, this psychological buffer is made possible through the experience of structure and predictability in everyday life.

The routine terror management model (RTM) integrates insights from existential theorists, TMT, and empirical research on routines to provide a foundation for investigations into the roles of routines in coping with mortality awareness and the implications of these roles for psychological well-being (see Ch. II of this thesis). A crucial role of routines proposed by the RTM model is that, by embedding experience within a structured and familiar context, an individual's everyday routines can create a "bubble" of psychological security that buffers against the impact of mortality awareness. Further, the RTM model suggests that individual differences in self-esteem can moderate this structural role of everyday routines in terror management, with low self-esteem individuals being more likely

to rely on their routines when faced with reminders of mortality. This increased reliance upon the comfort of routines aligns with TMT's perspective that individuals low in self-esteem lack the psychological security necessary to protect against the impact of mortality awareness (Routledge et al., 2010; Wisman & Heflick, 2016; Wisman et al., 2015). Finally, the RTM model also suggests that, in contrast, mortality reminders can prompt individuals high in self-esteem, who have an enhanced sense of psychological security (see Greenberg et al., 1997), to embrace novelty and reach beyond their everyday routines (see Vail et al., 2012).

Individual Differences in Self-Esteem

Indeed, the protective function of everyday routines in terror management may vary across individuals. Extensive research has shown that individual differences, particularly in self-esteem, can play an integral role in terror management (e.g., Harmon-Jones et al., 1997; Juhl & Routledge, 2014; Wisman & Heflick, 2016). As emphasized by the RTM model, self-esteem reflects the extent to which an individual feels valued and thus psychologically secure against the prospect of mortality (see also Greenberg et al., 1997). Studies have supported this idea, suggesting that individuals low in self-esteem tend to prioritize certainty and security when mortality is salient (e.g., Landau & Greenberg, 2006; Routledge et al., 2010), whereas those high in self-esteem are more inclined to pursue high-risk/high-payoff opportunities in response to mortality reminders (e.g., Landau & Greenberg, 2006; Taubman-Ben-Ari & Findler, 2006). Thus, while individuals low in self-esteem may seek the psychological security of their everyday routines when mortality is salient, individuals high in self-esteem may not. This notion aligns with a wide range of theoretical perspectives on human motivation and personal growth, indicating that individuals who feel secure are more likely to be motivated toward enhanced performance and creativity (e.g., Deci & Ryan, 1985; Ryan & Deci, 2000) and that people tend to evaluate routine (vs. novel) stimuli more positively when focusing on security (vs. growth) and vice versa (Gillebaart et al., 2012).

Overall, these findings highlight the importance of considering individual differences in self-esteem and their moderating effects in the context of terror management and everyday routines.

Overview and Predictions

Building on TMT and the RTM model, we hypothesized that everyday routines offer a buffer against mortality reminders, particularly for individuals lower in self-esteem. Accordingly, in Study 1 we predicted that participants lower in self-esteem would find their everyday routines more appealing after exposure to mortality reminders, and we explored the possibility that individuals higher in self-esteem might show the opposite trend. In Study 2, we predicted that increasing the salience of participants' everyday routines following mortality reminders would reduce the accessibility of death-related thoughts, particularly for individuals lower in self-esteem. In Study 3, we predicted that exposure to mortality reminders would particularly lead individuals lower in self-esteem to be less open to changing their established routines.

Study 1: The Appeal Everyday Routines

Drawing on the RTM model, the aim of Study 1 was to examine how mortality reminders influence the appeal of everyday routines and to determine if this effect varies according to levels of self-esteem. Specifically, we predicted that participants lower in self-esteem would find their routines significantly more appealing after exposure to mortality reminders (vs. a control topic; Prediction 1). Conversely, we were interested in exploring whether individuals higher in self-esteem might exhibit the opposite response.

Method

Participants

A random sample of 120 US adults[5] (N = 120, 44% female, age 21-69, M_{age} = 33, SD = 10) were compensated $1.50 for their participation in the study. Participants were recruited from Amazon Mechanical Turk using CloudResearch (formerly TurkPrime; see Litman et al., 2017; Litman & Robinson, 2020). CloudResearch (cloudresearch.com) is an online crowdsourcing platform linked to MTurk that provides additional data collection features (e.g., creating selection criteria; Chandler et al., 2019). To ensure data quality, we used the CloudResearch Approved List and enhanced data quality controls (i.e., duplicate IP Block, suspicious geocode block, and country verification). No data were excluded from the study.

Design

We conducted a hierarchical multiple regression analysis to analyze the impact of mortality reminders and self-esteem on the self-reported appeal of everyday routines (routine appeal). Our regression model included a mortality salience manipulation (between subjects: mortality reminders vs. dental pain reminders), self-esteem (continuous: mean-centered), and the interaction of these variables. Participants were randomly assigned to receive either mortality reminders or dental pain reminders. Before self-reporting routine appeal, all participants underwent a routine salience induction designed to enhance their everyday routines' salience.

[5] An a priori power analysis was conducted using G*Power 3.1.9.7 (Faul et al., 2007) to estimate the necessary sample size for achieving at least 80% power. This analysis was based on an average effect size of F^2 = .14 (equivalent to R^2 = .12), as reported in an extensive review of mortality salience effects (Burke et al., 2010; see also Yen & Cheng, 2013 for smaller estimates). With an alpha level of 0.05 and power of 0.80, the minimum sample size needed with this effect size is N = 82 for a multiple linear regression testing three predictors. Our study exceeded these requirements with a sample size of N =120, providing adequate power to detect an effect size of $R^2 \geq .09$, while staying within budgetary constraints.

Procedure

Initially, a cover story was presented, emphasizing the study's focus on personality and daily life. Supporting this cover story, participants completed an "activities and interests" questionnaire and the 10-Item Big Five Inventory (BFI-10; Rammstedt & John, 2007). Following these measures, participants were administered the Rosenberg Self-Esteem Scale (Rosenberg, 1965), which measures comprehensive feelings about the self with ten items such as "I take a positive attitude toward myself" and "I certainly feel useless at times" (reverse scored). Responses were assessed using a 6-point agreement format, where 1 = *strongly disagree*, and 6 = *strongly agree*. After recoding reverse-scored items, self-esteem scores were computed as the mean of responses across the 10 items. Higher scores indicate higher levels of self-esteem (M = 4.36, SD = 1.21, α = .94).

Next, participants were randomly assigned to receive either mortality reminders or dental pain reminders (e.g., Hayes & Schimel, 2018). In line with the TMT research paradigm (Solomon et al., 1991), participants in the mortality reminders condition responded to two open-ended prompts that read: "Briefly describe the emotions that the thought of your own death arouses in you" and "Jot down, as specifically as you can, what you think will happen to you physically as you die and once you are physically dead." The dental pain control condition consisted of two comparable items regarding the experience of physical pain (e.g., "Briefly describe the emotions that the thought of your own dental pain arouses in you"). Dental pain is a common aversive control topic employed in TMT research (see Cox et al., 2019).

Once again, following the standard TMT paradigm, after the mortality salience manipulation, participants completed the 20-item Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). Specifically, participants indicated the extent to which each of 10 positive affect items (e.g., *attentive;* M = 2.80, SD = .94, α = .90) and 10 negative affect

items (e.g., *hostile; M* = 1.73, *SD* = .90, α = .95) reflected how they felt right at that moment (1 = *very slightly or not at all*, 5 = *extremely*). After completing the PANAS, participants read a short story by Albert Camus, a standard procedure to provide a necessary delay after the manipulations (e.g., Greenberg et al.,1994).

Next, all participants engaged in the routine salience induction. Specifically, participants responded to an open-ended prompt based on an operational definition of everyday routines (i.e., frequently repeated and well-learned sets of consecutive actions requiring minimal attention or conscious control). It read, "Think about something in your everyday life that you do regularly and that you may have found yourself doing automatically (or without even thinking) on occasion. Write about it in the space below." Finally, after completing the routine salience induction, participants were asked to rate the appeal of their everyday routine on a 5-point scale. The question was, "How good does this routine sound to you right now?" (1 = *very bad*, 5 = *very good*). Higher scores indicate higher routine appeal (*M* = 3.50, *SD* = 1.00).

Results

To test the prediction that mortality reminders (vs. the dental pain control) would increase the appeal of everyday routines, particularly among those lower in self-esteem, we conducted a hierarchical multiple regression analysis following the guidelines of Aiken and West (1991). We regressed routine appeal scores on the predictors in a stepwise manner. This approach allowed us to evaluate the incremental effects of introducing interaction terms on the predictive model. At Step 1, we entered the main effects of the mortality salience manipulation (dummy coded: 1 = mortality reminders, 0 = dental pain control) and self-esteem (mean-centered). At Step 2, we entered the interaction between mortality salience and self-esteem.

At Step 1, the model explained a small proportion of the variance in routine appeal ($R^2_{adjusted}$ = .02), where the main effect of self-esteem approached significance, B = .15, SE = .08, $t(117) = 1.97$, p = .051. This finding suggests that higher self-esteem scores marginally predicted higher routine appeal, although this effect was not statistically significant. The main effect of mortality salience was non-significant (p = .951), consistent with our hypothesis that the influence of mortality salience on routine appeal depends on self-esteem levels.

At Step 2, upon introducing the interaction between mortality salience and self-esteem, the proportion of the variance explained by the model increased ($R^2_{adjusted}$ = .11). The main effect of self-esteem became significant (B = .38, SE = .10, $t(116) = 3.97$, $p < .001$), while the main effect of mortality salience remained non-significant (p = .963). Importantly, the hypothesized interaction between mortality salience and self-esteem was significant, B = −.54, SE =.15, $t(116) = -3.69$, $p < .001$, indicating that self-esteem levels significantly moderated the influence of mortality salience on routine appeal.

To further explore the two-way interaction effect identified in the hierarchical multiple regression, we employed the PROCESS macro (Model 1; Hayes, 2017) to test the highest-order interaction and conduct a simple slopes analysis. These analyses aimed to determine the unique contribution of self-esteem as a moderator and to assess the effects of mortality reminders on routine appeal scores at different levels of self-esteem (±1 *SD* from the centered mean).

The highest-order interaction test showed that the self-esteem × mortality salience interaction accounted for an additional 10% of the variance in routine appeal beyond the main effects, ΔR^2 =.10, $F(1, 116) = 13.60$, $p < .001$. This effect size indicates that the interaction significantly explained more variance than the main effects alone, and the sample size of N = 120 provided adequate power according to our a priori power analysis. Bootstrapping analyses with 50,000 samples were also conducted for this analysis, confirming the

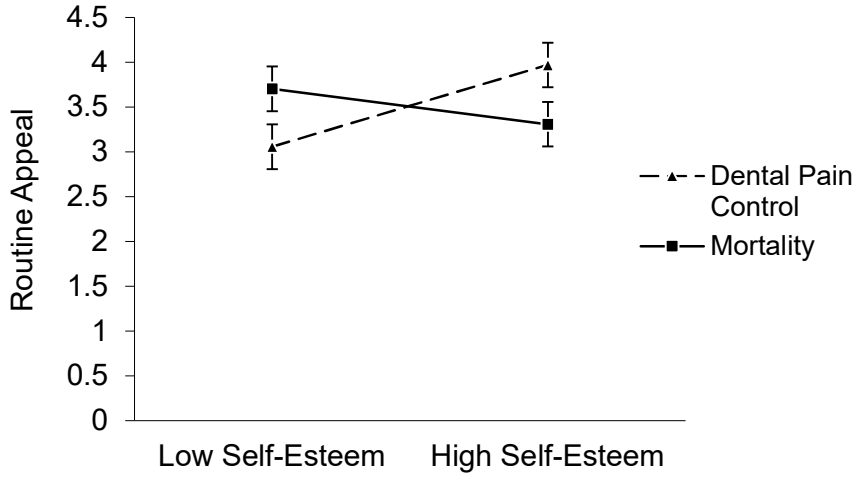
significance of the interaction effects. The bootstrapped regression coefficient for the interaction effect was $B = –0.54$**,** with a 95% confidence interval (CI) ranging from –.82 to –.25, indicating that the effect was statistically significant and consistent across resamples.

Moreover. consistent with our hypothesis, results indicated that mortality reminders (compared to the dental pain control) significantly increased routine appeal at lower levels of self-esteem (-1 *SD* from the self-esteem mean), $B = .65$, $SE = .25$, $t(116) = 2.59$, $p = .011$. In contrast, at higher levels of self-esteem (+ 1 *SD*), mortality reminders (compared to the dental pain control) decreased routine appeal, $B = -.66$, $SE = .25$, $t(116) = -2.67$, $p = .009$.

These results support our initial prediction that participants with lower self-esteem, unlike those with higher self-esteem, found their routines significantly more appealing after exposure to mortality reminders (Prediction 1). Additionally, our exploratory hypothesis was confirmed, as individuals with higher self-esteem showed the opposite response, reporting a decreased appeal of their routines following mortality reminders. Figure 1 graphically illustrates these interaction effects, demonstrating the conditional impact of mortality salience across varying levels of self-esteem.

Figure 1

Routine Appeal as a Function of Mortality Salience at ±1 SD of Self-Esteem



Finally, we examined the main effect of self-esteem within each condition separately to explore further the contextual effects of mortality salience on routine appeal. In the control condition, where participants were exposed to dental pain reminders, the regression model was significant, F (1, 58) = 15.25, $p < .001$, $R^2_{\text{adjusted}} = .20$. This result suggests that self-esteem explains a substantial portion of the variance in routine appeal. Specifically, routine appeal increased by .38 points for each point increase on the self-esteem scale, $B = .38$, $SE = .10$, $t(58) = 3.91$. In sum, these results suggest that higher levels of self-esteem are associated with increased routine appeal in the context of a typical aversive experience like dental pain salience.

However, in the mortality salience condition, the influence of self-esteem on routine appeal was non-significant ($p = .142$). This finding indicates that the presence of mortality reminders may obscure the typical positive relationship between self-esteem and routine appeal, confirming that the effects of mortality salience uniquely interact with individual differences in self-esteem to influence routine appeal.

Discussion

The results of Study 1 supported our prediction. Following mortality reminders (compared to dental pain reminders), participants lower in self-esteem found their routines more appealing. In contrast, participants higher in self-esteem found their routines less appealing following mortality reminders (compared to dental pain reminders). In sum, these findings are consistent with our RTM-based hypothesis that an individual's everyday routines provide a buffer against the impact of mortality awareness, particularly for individuals lower in self-esteem.

Moreover, when examining effects specifically within the dental pain control condition, it was found that individuals lower in self-esteem found their everyday routines less appealing. In contrast, self-esteem did not significantly predict the appeal of everyday

routines in the mortality salience condition. In sum, these findings support the notion that reminders of mortality (not dental pain reminders) interact with self-esteem to impact routine appeal. However, one limitation of this study is its failure to include a controlled manipulation of routine salience. This limitation is addressed in the following study.

Study 2: Death Thought Accessibility

In Study 1, we observed that reactions to mortality reminders varied according to levels of self-esteem. Following exposure to mortality reminders, individuals lower in self-esteem found their everyday routines more appealing, while those higher in self-esteem found their routines less appealing. This observed pattern is consistent with prior research, which has shown that individuals higher in self-esteem exhibit greater psychological security when confronted with reminders of mortality, often favoring options with higher risk and higher payoff under such conditions (Routledge et al., 2010; Landau & Greenberg, 2006; Wisman et al., 2015).

Building on the findings of Study 1, Study 2 introduces a controlled manipulation of routine salience following the mortality salience manipulation to assess changes in the accessibility of death-related thoughts (DTA, e.g., Arndt et al., 1997). As discussed in Chapter II, TMT's DTA hypothesis posits that activating a psychological structure that protects against the impact of mortality awareness should reduce DTA (Arndt et al., 1997; Mikulincer & Florian, 2002; for discussion, see Schimel et al., 2019). Informed by this hypothesis, we predicted that participants' contemplation of their everyday routines (vs. contemplation of a non-routine activity) following mortality reminders (vs. a control topic) would reduce DTA, particularly among individuals lower in self-esteem (Prediction 2). This effect contrasts with higher levels of self-esteem, which have been shown to buffer against increases in DTA (Harmon-Jones et al., 1997; Hayes et al., 2008; Mikulincer and Florian, 2002). To enhance methodological robustness, Study 2 employs general physical pain as a

control topic to bring to mind a broad and aversive experience, contrasting with the more specific aversive experience of dental pain used as the control in Study 1.

Method

Participants

A random sample of 160 US adults[6] *(N* = 160, 46% female, age 19-72, M_{age} = 39, *SD* = 11) were compensated $1.50 for their participation in the study. Participants were recruited from Amazon Mechanical Turk again using the CloudResearch Approved List and the same enhanced data quality controls used in Study 1. No data were excluded from the study.

Design

In line with our analytical approach from Study 1, we conducted a hierarchical multiple regression analysis to analyze the impact of mortality reminders, self-esteem, and everyday routines on participants' death thought accessibility (DTA). Our regression model included two between-subjects manipulations: mortality salience (mortality reminders vs. physical pain reminders) and routine salience (contemplation of an everyday routine vs. a non-routine activity). Also central to our analysis was self-esteem (continuous: mean-centered), with consideration of all possible two-way interactions and the three-way interaction among these variables. Participants were randomly assigned to one of the four conditions resulting from crossing these two manipulations.

Procedure

Initially, Study 2 followed the same procedure as Study 1. Again, following the preliminary measures introduced in Study 1, participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965; *M* = 4.49, *SD* = 1.19, α = .95) and were randomly assigned

[6] Consistent with the power, effect size, and alpha level criteria used in Study 1, the minimum sample size required for a multiple linear regression with seven predictors is *N* = 110. Our study exceeded this requirement with a sample size of *N* = 160, providing adequate power to detect an effect size of $R^2 \geq .09$ while staying within budgetary constraints.

to receive reminders of mortality or reminders of general physical pain (e.g., Greenberg et al., 1990). After the mortality salience manipulation, participants completed the PANAS, assessing positive affect (M = 2.74, SD = .89, α = .92) and negative affect (M = 1.58, SD = .71, α = .91). The administration of the PANAS was followed by the same distraction task utilized in Study 1.

After completing the initial procedures, participants were randomly assigned to one of the conditions of the routine salience manipulation: either contemplating an everyday routine or a non-routine activity. Those in the routine condition were asked to respond to an open-ended prompt: "Please write about a routine that you do regularly in everyday life. As you write, imagine yourself as if in the moment doing the activity right now." Conversely, participants in the non-routine control responded to a parallel prompt: "Please write about an activity that you do NOT do regularly in everyday life. As you write, imagine yourself as if in the moment doing the activity right now."

Finally, for assessing the dependent variable DTA, participants were presented with a word-completion task (e.g., Arndt et al., 1997; also see Cox et al., 2019), which presented 25 word fragments, six of which could be completed with a neutral or a death-related word. For example, the fragment COFF_ _ could be completed as COFFEE (a neutral word) or COFFIN (a death-related word). The possible death-related words were *dead*, *grave*, *skull*, and *coffin*. DTA scores were computed by summing the number of death words created by each participant (M = 2.88, SD = 1.62). Higher scores indicate higher accessibility of death-related thoughts.

Results

We conducted a hierarchical multiple regression analysis to test the prediction that increasing the salience of participants' everyday routines (vs. a non-routine activity) following mortality reminders (vs. physical pain reminders) reduces DTA, particularly for

those lower in self-esteem. We regressed DTA scores on the predictors in a stepwise manner. Following the guidelines by Aiken & West (1991), we entered the main effects at Step 1: mortality salience and routine salience manipulations, both dummy coded (1 = experimental condition, 0 = control condition) and self-esteem (mean-centered). At Step 2, we introduced all possible two-way interactions between mortality salience, routine salience, and self-esteem. Finally, at Step 3, we added the three-way interaction among these variables.

At Step 1, the model explained a small proportion of the variance in DTA (R^2_{adjusted} = .01), where the main effect of self-esteem was significant, $B = -.24$, $SE = .11$, $t(156) = -2.22$, $p = .028$. This finding suggests that higher self-esteem scores predicted lower DTA scores, aligning with prior research demonstrating that mortality salience's influence on DTA depends on self-esteem levels. Neither mortality salience nor routine salience emerged as significant predictors (*ps* > .693).

At Step 2, upon introducing the two-way interactions, the proportion of the variance explained by the model increased (R^2_{adjusted} = .04). However, only the interaction between mortality salience and self-esteem was significant, $B = -.44$, $SE = .23$, $t(153) = -1.97$, $p = .050$ (all other effects, *ps* > .249).

At Step 3, upon introducing the three-way interaction between mortality salience, routine salience, and self-esteem, the adjusted R^2 increased again (R^2_{adjusted} = .06). The interaction between mortality salience and self-esteem remained significant $B = -1.05$, $SE = .34$, $t(152) = -3.05$, $p = .003$. Most importantly, as hypothesized, a significant three-way interaction was found between mortality salience, routine salience, and self-esteem, $B = 1.04$, $SE = .45$, $t(152) = 2.30$, $p = .023$ (all other effects, *ps* > .359). The significant three-way interaction indicates that the effect of mortality salience on DTA is not consistent across all conditions. Instead, the way mortality salience affects DTA is influenced by both routine

salience and self-esteem, potentially making routines an effective coping mechanism for some individuals but not for others.

Given the significant three-way interaction found in the hierarchical regression, we sought to further probe the specific nature of this interaction by using Hayes' PROCESS macro (Model 3; Hayes, 2017). To better understand the role of routine salience in moderating the relationship between mortality salience and DTA, we designated routine salience as the predictor variable (X). This allows us to explore how routine salience interacts with mortality salience and self-esteem to influence DTA. By examining conditional effects at different levels of self-esteem (±1 SD), this analysis will provide insight into how routine salience moderates the impact of mortality salience across different self-esteem levels.

A test of the highest-order interaction was conducted to assess the unique contribution of the three-way interaction to the variance in DTA, beyond main effects and two-way interactions. The highest-order interaction test from PROCESS indicated that the inclusion of the three-way interaction explained an additional 3% of variance in the outcome, $\Delta R^2 = 0.03$, $F(1, 152) = 5.31$, $p = 0.023$.[7] Bootstrapping analyses with 50,000 samples were also conducted for this analysis, confirming the significance of the interaction effects. The bootstrapped regression coefficient for the interaction effect was $B = 1.04$**,** with a 95% confidence interval (CI) ranging from .01 to 1.97, indicating that the effect was statistically significant and consistent across resamples.

Next, the routine salience × self-esteem interaction was examined across both conditions of the mortality salience manipulation. Results indicated that this interaction was significant in the mortality reminders condition, $B = .73$, $F(1, 152) = 5.84$, $p = 0.017$, suggesting that the effects of routine salience on DTA varied depending on participants'

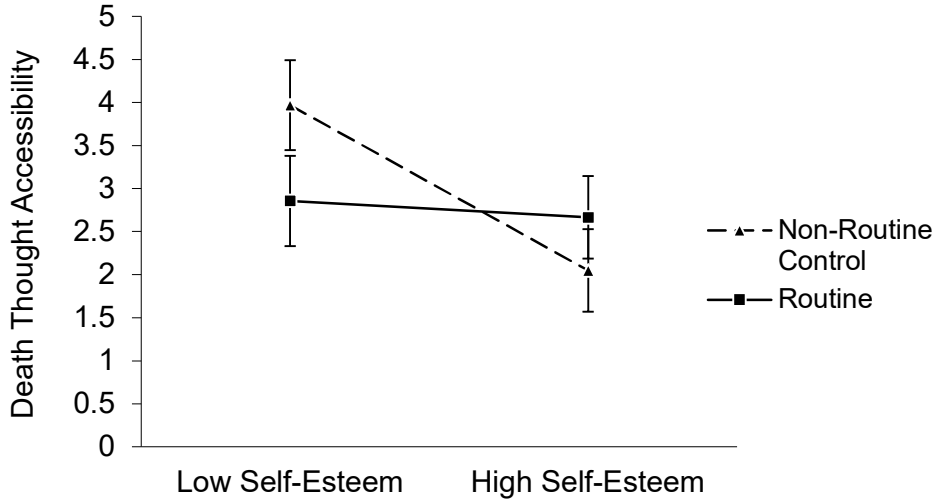
[7] This effect size ($R^2 = .03$) is smaller than the threshold identified by our sensitivity analysis ($R^2 = .09$), suggesting that the analysis of the interaction may be underpowered. This limitation will be discussed further in the general discussion at the end of the chapter.

levels of self-esteem, particularly in the context of mortality reminders. In contrast, the routine salience × self-esteem interaction was non-significant in the physical pain control condition, $p = 0.359$, suggesting that the effects of routine salience on DTA were unique to the mortality reminders condition.

Finally, we probed the routine salience × self-esteem interaction using a simple slopes analysis at ±1 *SD* of self-esteem. Focusing on the mortality salience condition, results supported our hypothesis, indicating that at low levels of self-esteem (−1 *SD*), contemplating an everyday routine (relative to a non-routine activity) following reminders of mortality significantly decreased DTA, $B = –1.11$, $SE = .52$, $t(152) = –2.12$, $p = .035$. In contrast, at high levels of self-esteem (+1 *SD*), contemplating an everyday routine (relative to a non-routine activity) following reminders of mortality had no significant effect on DTA, $p = .200$.

Figure 2

DTA as a Function of Routine Salience at ±1 SD of Self-Esteem in the Mortality Reminder Condition



Supplementary Analysis

Although our primary hypothesis focused on routine salience as the predictor variable (X), we conducted an exploratory supplementary analysis using PROCESS Model 3, this time with mortality salience as the predictor variable (X). This approach allowed us to further investigate how self-esteem and routine salience interact to moderate the effect of mortality salience on DTA. By shifting the predictor variable, this analysis offers additional insight into the role that routine salience plays in either buffering or amplifying the effects of mortality reminders, particularly across different levels of self-esteem.

This analysis was motivated by findings from Study 1, which suggested that mortality reminders can decrease the appeal of routines for individuals with higher self-esteem. By placing mortality salience as the predictor, we were able to assess how different levels of routine salience (contemplating a routine vs. a non-routine activity) interact with self-esteem to influence DTA in response to mortality reminders.

The highest-order interaction test from indicated that the inclusion of the three-way interaction explained an additional 3% of variance in the outcome, $\Delta R^2 = 0.03$, $F(1, 152) = 5.31$, $p = 0.023$. Bootstrapping analyses with 50,000 samples were also conducted for this analysis, confirming the significance of the interaction effects. The bootstrapped regression coefficient for the interaction effect was $B = 1.04$**,** with a 95% confidence interval (CI) ranging from .02 to 1.98, indicating that the effect was statistically significant and consistent across resamples.

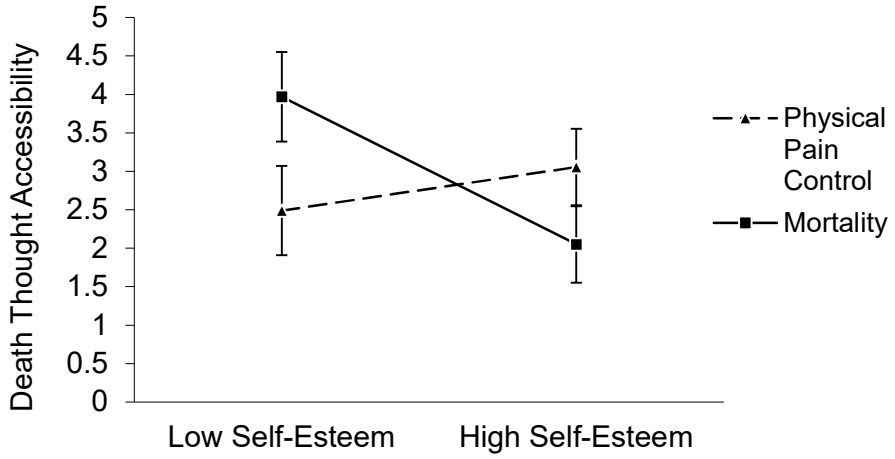
Next, the mortality salience × self-esteem interaction was examined across both conditions of the routine salience manipulation. Results indicated that this interaction was significant in the non-routine control condition, $B = –1.05$, $F(1, 152) = 9.31$, $p = 0.003$, suggesting that the effects of mortality salience on DTA varied depending on participants' levels of self-esteem, and only in the non-routine control condition. In contrast, the mortality

salience × self-esteem interaction was non-significant in the routine condition, $p = 0.965$, suggesting that the effects of routine salience on DTA were unique to the non-routine control condition.

Finally, we probed the mortality salience × self-esteem interaction using a simple slopes analysis at ±1 SD of self-esteem. Focusing on the non-routine control condition, results indicated that at low levels of self-esteem (−1 SD), contemplating a non-routine activity following reminders of mortality (relative reminders of physical pain) significantly increased DTA, B = 1.48, SE = .58, t(152) = 2.55, p = .012. In contrast, at high levels of self-esteem (+1 SD), contemplating a non-routine activity following mortality reminders (relative to reminders of physical pain) significantly decreased DTA, B = –1.01, SE = .51, t(152) = –.39, p = .045.

Figure 3

DTA as a Function of Mortality Salience at ±1 SD of Self-Esteem in the Non-Routine Control Condition



Discussion

The findings of Study 2 offer added support for the RTM model and our hypothesis that an individual's everyday routines can buffer against the impact of mortality awareness,

particularly for individuals lower in self-esteem. Consistent with prior research, mortality reminders increased DTA among individuals low in self-esteem (e.g., Harmon-Jones et al., 1997). Most importantly, in support of our hypothesis, we observed that contemplating established everyday routines (relative to a non-routine activity) following mortality reminders reduced DTA for those lower in self-esteem, but not those high in self-esteem. While the observed effect size was modest, the results of the 50,000 bootstrap resamples confirmed the stability of the interaction effect, providing strong evidence for the robustness of these findings. In sum, these results suggest that following mortality reminders, the salience of an individual's everyday routines can buffer the accessibility of death-related thoughts, particularly for those lower in self-esteem.

In interpreting the findings of Study 2, it is also important to consider the supplementary analyses, which shed light on how different levels of routine salience (contemplating a routine vs. a non-routine activity) interact with self-esteem to influence DTA in response to mortality reminders. The finding that contemplating a non-routine activity following mortality reminders (relative to reminders of physical pain) increased DTA for individuals lower in self-esteem supports our hypothesis and aligns with TMT, as these individuals are more susceptible to existential anxiety in the absence of effective coping mechanisms.

However, the finding that contemplating a non-routine activity following mortality reminders (relative to reminders of physical pain) lowered DTA among higher self-esteem individuals is more nuanced. Higher DTA in the physical pain control condition may indicate that individuals higher in self-esteem experience more existential anxiety when faced with reminders of physical vulnerability (pain) than with mortality salience**,** where they have well-practiced coping mechanisms. In the physical pain control condition**,** higher self-esteem participants might not have as effectively mobilized these coping resources, leaving them

more vulnerable to heightened DTA. Hand in hand, individuals higher in self-esteem might be particularly inclined to seek out novel or non-routine engagement following mortality reminders.

Study 1 revealed that individuals higher in self-esteem found their routines less appealing following mortality reminders, suggesting that routines may not provide the same comfort or security to those higher in self-esteem when confronted with thoughts of death. This insight helps explain the supplementary findings in Study 2, where non-routine activities appear to play a unique role. Prior research aligns with the notion that individuals higher in self-esteem may avoid routines, which are often associated with predictability and comfort, in favor of engaging in activities that offer less predictability in exchange for a higher psychological payoff (see Landau & Greenberg, 2006). In this context, non-routine activities could represent a more effective coping mechanism for these individuals, providing an opportunity to bolster the self and ward off death-related thoughts.

In contrast, individuals lower in self-esteem may lack the internal psychological defenses needed to effectively engage with uncertainty or novelty when mortality is made salient. As a result, the non-routine control condition may fail to provide the structure or stability that these individuals rely on to cope with the potential for existential anxiety, leaving them more vulnerable to heightened DTA.

Although the supplementary finding among individuals with higher self-esteem aligns with the results of Study 1, its implications are limited, as it was not part of the original hypothesis and is explained through post-hoc connections to the RTM model. While this pattern is interesting and warrants further investigation, it should be interpreted with caution until future studies can test this specific interaction directly.

Taken together, these findings reinforce the importance of everyday routines in buffering the effects of mortality awareness for individuals with lower self-esteem, while also highlighting

the unique ways in which individuals navigate existential concerns across variations in self-esteem.

Study 3: Openness to Routine Change

In Study 1, participants lower in self-esteem found their routines more appealing following mortality reminders, whereas those higher in self-esteem exhibited the opposite response. Study 2 further demonstrated that increased salience of everyday routines after mortality reminders significantly reduced DTA for participants lower in self-esteem but not those higher in self-esteem. In sum, these findings support our hypothesis that everyday routines can act as a buffer against the impact of mortality awareness, particularly for individuals lower in self-esteem. According to the RTM model, this buffering effect is attributed to the psychological security that stems from the familiar structure of one's everyday routines.

Building on these insights, Study 3 introduces a focused examination of participants' openness to routine change, providing a more direct assessment of the structural role of routines in terror management. After undergoing a mortality salience manipulation, participants were asked about the likelihood of changing their routines. We predicted that, following exposure to mortality reminders (vs. a control topic), only individuals lower in self-esteem would report less openness to changing their routines (Prediction 3.1). Conversely, we explored whether individuals higher in self-esteem might report greater openness to routine change following mortality reminders (Prediction 3.2).

Method

Participants

A random sample of 120 US adults[8] (N = 120, 48% female, age 21-70, M_{age} = 40, SD = 13) were compensated $1.50 for their participation in the study. Participants were recruited from Amazon Mechanical Turk again using the CloudResearch Approved List and the same enhanced data quality controls used in Studies 1 and 2. No data were excluded from the study.

Design

In line with our analytical approach from Studies 1 and 2, we conducted a hierarchical multiple regression analysis to examine the impact of mortality reminders and self-esteem on participants' self-reported openness to changing their established everyday routines (openness to routine change). Our regression model included a mortality salience manipulation (between subjects: reminders of mortality vs. reminders of television-watching), self-esteem (continuous: mean-centered), and the interaction of these variables. Participants were randomly assigned to receive either reminders of mortality or reminders of television-watching. The inclusion of a neutral control, such as reminders of television watching, provided a baseline for comparison, minimizing emotional arousal, unlike the aversive controls used in earlier studies. This setup allowed us to isolate more clearly the effects of mortality salience on participants' openness to routine change, ensuring that our findings are not influenced by the general stress or discomfort that might arise from more aversive conditions.

[8] Consistent with the power, effect size, and alpha level criteria used in Studies 1 and 2, the minimum sample size required for a multiple linear regression with three predictors is N = 82. Our study exceeded these requirements with a sample size of N = 120, providing adequate power to detect an effect size of $R^2 \geq .10$, while staying within budgetary constraints.

Procedure

Consistent with the methodologies of Studies 1 and 2, Study 3 commenced with participants completing the same two preliminary measures, followed by the administration of the Rosenberg Self-Esteem Scale (Rosenberg, 1965; $M = 4.49$, $SD = 1.19$, $\alpha = .95$) $M = 4.59$, $SD = 1.22$, $\alpha = .94$). Subsequently, participants were randomly assigned to receive reminders of mortality or reminders of television-watching (e.g., Greenberg et al., 1992). After the mortality salience manipulation, participants filled out the PANAS (Watson et al., 1988), assessing positive affect ($M = 3.15$, $SD = 1.00$, $\alpha = .93$) and negative affect ($M = 1.63$, $SD = .81$, $\alpha = .94$). Following the PANAS, participants completed the same distraction task from Studies 1 and 2.

Following the distraction task, all participants were asked to name five routines from their everyday life. Instructions read, "Everyone has some kind of an everyday routine, and we're interested in learning more about what a typical day looks like for people from different walks of life. For the next question, please name five of your everyday routines." After naming and submitting their list of five routines, participants were presented with a counterbalanced statement on routine change. The statement read, "Sometimes it is good to stay with what you know. As one old saying goes, 'If it isn't broken, don't fix it.' On the other hand, sometimes it is good to try something new. As another old saying goes, 'If nothing is ventured, nothing is gained.'" Finally, participants were presented with their list of five routines and asked to indicate the extent to which they were open to changing each routine. Specifically, instructions read, "Below is the list of routines you provided. Given the opportunity to try a new way of carrying out these routines, how likely would you be to try the new way?" Responses were assessed using a scale of 0-100, where 0 = *definitely stick to*

the usual way, and 100 = *definitely try the new way* (M = 37.83, SD = 32.10, α = .83).[9] Scores were computed as the means of responses across the five items. Higher scores indicate greater openness to routine change.

Results

To test the prediction that participants lower in self-esteem, unlike those higher in self-esteem, would be less open to routine change following reminders of mortality—as opposed to reminders of television-watching—we conducted a hierarchical multiple regression analysis. We regressed participants' openness to routine change on the predictors in a stepwise manner. Following the guidelines by Aiken & West (1991), we entered the main effects at Step 1: mortality salience manipulation (dummy coded: 1 = mortality reminders, 0 = TV control) and self-esteem (mean-centered). At Step 2, we entered the interaction between mortality salience and self-esteem.

At Step 1, the model explained only a small proportion of the variance in openness to routine change (R^2_{adjusted} = –.01), with neither the main effect of mortality salience (B = –5.70, SE = 5.90, t(117) = –.97, p = .336) nor the main effect of self-esteem (B = –.19, SE = 2.42, t(117) = –.08, p = .938) reaching significance.[10] Upon introducing the interaction between mortality salience and self-esteem at Step 2, the proportion of the variance explained by the model slightly increased (R^2_{adjusted} = .02). While the main effect of self-esteem remained non-significant (B = –5.23, SE = 3.41, t(116) = –1.53, p = .128) the p-value decreased, indicating a closer approach to significance, yet still non-conclusive. The main effect of mortality salience also remained non-significant (B = –5.72, SE = 5.82, t(116) = –.98, p = .328).

[9] Responses for the dependent variable, openness to routine change, were collected using a 20-increment scale (0, 5, 10, ..., 95, 100) instead of the intended continuous 0-100 scale. This oversight may affect the direct comparability with results from subsequent chapters, where a continuous 0-100 scale is consistently utilized for different dependent variables.

[10] Given the presence of a significant interaction and the absence of significant main effects in Study 3, detailed coefficients are reported for non-significant predictors to fully elucidate the dynamics among the studied variables.

Importantly, as hypothesized, a significant interaction between mortality salience and self-esteem was observed, $B = 9.90$, $SE = 4.78$, $t(116) = 2.07$, $p = .041$, demonstrating the conditional effect of mortality salience on openness to routine change.

To further explore the two-way interaction effect identified in the hierarchical multiple regression, we employed the PROCESS macro (Model 1; Hayes, 2017) to test the highest-order interaction and conduct a simple slopes analysis. These analyses aimed to determine the unique contribution of self-esteem as a moderator and to assess the effects of mortality reminders on openness to routine change at different levels of self-esteem (±1 SD from the centered mean).

The highest-order interaction test indicated that the inclusion of the interaction explained an additional 4% of the variance in the outcome, $\Delta R^2 = 0.04$, $F(1, 116) = 4.29$, $p = 0.041$.[11] Bootstrapping analyses with 50,000 samples were also conducted for this analysis, confirming the significance of the interaction effects. The bootstrapped regression coefficient for the interaction effect was $B = 9.90$**,** with a 95% confidence interval (CI) ranging from .10 to 18.82, indicating that the effect was statistically significant and consistent across resamples.

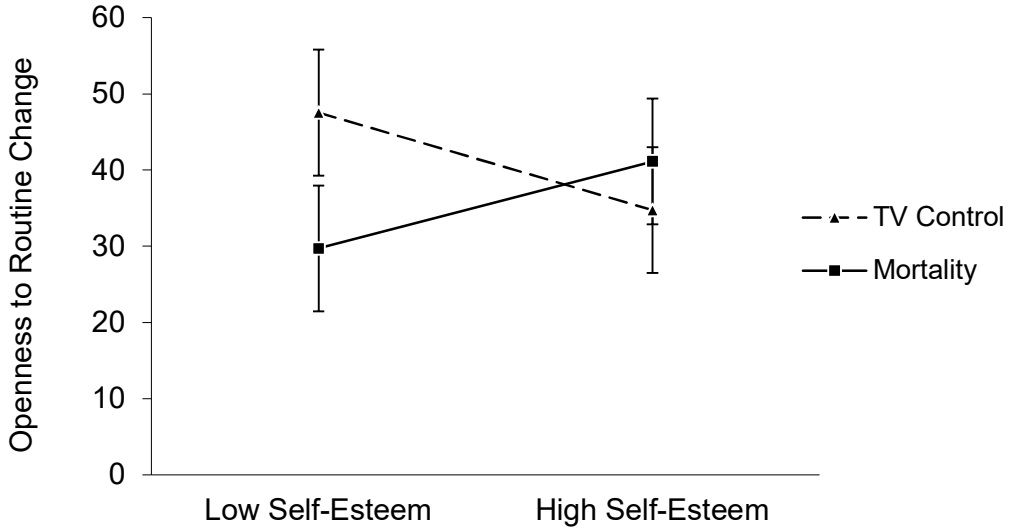
Simple slopes revealed that mortality reminders, compared to the TV control, decreased openness to routine change at lower levels of self-esteem (–1 *SD* from the self-esteem mean), $B = –17.82$, $SE = 8.26$, $t(116) = –2.16$, $p = .033$. In contrast, at higher levels of self-esteem (+ 1 *SD*), mortality reminders (compared to the TV control) did not have a significant effect on participants' openness to routine change, $B = 6.39$, $SE = 8.25$, $t(116) = .77$, $p = .440$). These results support our prediction that participants lower in self-esteem, unlike those higher in self-esteem, would report less openness to routine change after

[11] This effect size ($R^2 = .04$) is smaller than the threshold identified by our sensitivity analysis ($R^2 = .10$), suggesting that the analysis of the interaction may be underpowered. This limitation will be discussed further in the general discussion at the end of the chapter.

exposure to mortality reminders (Prediction 3). Figure 4 illustrates these interaction effects graphically, demonstrating the conditional effects of mortality salience across varying levels of self-esteem.

Figure 4

Openness to Routine Change as a Function of Mortality Salience at ±1 SD of Self-Esteem



Discussion

The findings from Study 3 further substantiate the RTM model's proposed structural role, suggesting that everyday routines may act as a buffer against the psychological impact of mortality awareness, particularly for individuals lower in self-esteem. Confirming our hypothesis, after being reminded of mortality (compared to the neutral control topic of watching television), participants lower in self-esteem reported a reduced openness to change their established everyday routines. Conversely, participants higher in self-esteem remained as open to routine change following mortality reminders as they were following the neutral control topic. While the observed effect size was modest, the results of the 50,000 bootstrap resamples confirmed the stability of the interaction effect, providing strong evidence for the

robustness of these findings. These results underscore the RTM-based proposition that the familiar structure of an individual's everyday routines could be a key mechanism for the buffering effect of routines, particularly among individuals lower in self-esteem.

General Discussion

TMT proposes that individuals develop and maintain a psychological buffer against the impact of mortality awareness by investing in a cultural worldview, internalizing its standards, and aligning their lives with those standards. By meeting or exceeding cultural standards, people gain a sense that they are valued members of their culture, which boosts self-esteem and provides a sense of psychological security that helps people cope with the awareness of mortality. This buffer is fortified through both symbolic beliefs, such as the enduring legacy of one's soul or values, and concrete experiences of an orderly and predictable world.

The RTM model extends this idea, suggesting that the familiar structure of an individual's everyday routines plays a crucial role in providing psychological security, particularly for those lower in self-esteem. The present work built upon the RTM model to investigate the buffering role of everyday routines against mortality awareness and how this function varies at higher and lower levels of self-esteem.

Supporting the RTM model, we found that participants lower in self-esteem (in contrast to those higher in self-esteem) found their everyday routines more appealing following reminders of mortality (Study 1). Additionally, we predicted and found that, following reminders of mortality, the salience of participants' everyday routines decreased the accessibility of death-related thoughts among those lower in self-esteem (and not those higher in self-esteem; Study 2). Finally, we predicted and found that, following mortality reminders, participants lower in self-esteem (and not those higher in self-esteem) were less open to changing their routines (Study 3). These studies demonstrated consistent effects

across distinct aversive and neutral control conditions: dental pain reminders in Study 1, general physical pain reminders in Study 2, and reminders of television-watching in Study 3.

While a single set of studies cannot definitively determine whether the effects found here are unique to the threat of death, the convergent evidence obtained in these studies strengthens support for the notion that the observed effects resulted from contemplating mortality rather than activating the salience of aversive experiences. In addition, these findings are consistent with previous research on terror management functions, demonstrating that individuals lower in self-esteem may become less explorative and risk-averse when reminded of mortality (e.g., Landau & Greenberg, 2006; Routledge et al., 2010). The present studies expand on these prior findings, demonstrating that engaging in psychologically safe and familiar everyday routines can serve as an effective strategy for buffering the impact of mortality awareness, particularly for individuals lower in self-esteem.

As part of the original analyses using Hayes' PROCESS macro (Hayes, 2017), we conducted a bootstrap analysis with 50,000 resamples per study across all three studies to assess the stability and reliability of the observed interaction effects. Bootstrapping, integrated within PROCESS, provides a robust method for estimating variability and generating more accurate confidence intervals by resampling the data multiple times. This ensures that the observed effects are consistent across resamples and not dependent on a single sample (Preacher et al., 2007).

The results consistently supported the interaction effects in all three studies, with bootstrapped 95% confidence intervals that did not include zero. This reinforces the statistical reliability and robustness of the interaction effects. The consistency of these findings across 50,000 resamples per study strengthens the validity of the results, confirming that the observed interactions are stable and not due to random variation.

Implications for TMT

A large body of evidence demonstrates that mortality reminders not only lead individuals to invest in specific aspects of their worldview and self-esteem but also prompt non-specific efforts to achieve a simple, consistent, and orderly understanding of the social world, a process known as cognitive structuring (see Ch. II of this thesis). Accordingly, threats to these foundational sources of structure can heighten DTA, underscoring the critical role of cognitive structures in coping with mortality awareness (cf. Swanson & Landau, 2019). This body of work suggests that managing the impact of mortality awareness is a continuous endeavor. Maintaining a meaningful and value-conferring worldview entails an ongoing cognitive process of delineating and organizing fragments of the world into dependable and predictable patterns (Greenberg et al., 2013). Thus, the role of an individual's everyday routines as a buffer against the impact of mortality awareness, as demonstrated in the present studies, aligns with prior research.

Furthermore, our studies distinguish the role of everyday routines from the cognitive processes that have been previously explored in TMT and structure-seeking research (for review, see Swanson & Landau, 2019). In this work, we conceptualize routines not merely as cognitive exercises but as established behavioral patterns. Our routine salience inductions aimed to activate these pre-existing behavioral frameworks—individuals' everyday routines—rather than to engage cognitive structuring, such as organizing experiences into coherent patterns. Consequently, our findings broaden the theoretical framework of TMT, demonstrating that the role of structure in terror management extends beyond cognitive structuring processes alone (cf. Greenberg et al., 2013; Landau et al., 2015). Indeed, our results indicate that the behavioral manifestations of these processes—concrete, established routines—also play a significant role in managing mortality awareness.

Limitations

This research acknowledges certain limitations. For example, Study 1 did not include a control condition to compare against the effects of routine salience. This limitation was addressed in Study 2 by introducing a control that, while designed as a suitable counter to routine salience, may not have been entirely neutral. Contemplating actions one does not regularly engage in everyday life could inadvertently heighten novelty salience. For individuals lower in self-esteem, novelty may be perceived as especially risky and aversive following mortality reminders (Landau & Greenberg, 2006; Routledge et al., 2010). Thus, the control condition could have inadvertently intensified the effects of mortality salience on DTA for those lower in self-esteem. Interestingly, such results would still support our overarching hypothesis that routines—as the antithesis of novelty—can buffer against the psychological impact of mortality awareness. Nevertheless, future studies should aim to replicate our findings with a more neutrally framed control condition.

From a broader view, our conceptualization of routines draws on their inherent structure, rooted in behaviors frequently repeated within stable contexts (Ouellette & Wood, 1998; VandenBos, 2007). Such structure has been linked to feelings of safety (Avni-Babad, 2011), which can, in theory, buffer against the impact of mortality awareness (Rothschild et al., 2019; Mikulincer, 2019). Study 3's findings support the notion that the familiar structure of everyday routines contributes to this buffering function. Nevertheless, the direct impact of routines on feelings of safety was not explored in the present studies. Future investigations should explicitly assess feelings of safety following routine salience manipulations to establish a causal link.

Statistical Power

In Study 1, the predicted interaction effect ($\Delta R^2 = .10$) was adequately powered, as confirmed by G*Power sensitivity analyses (Faul et al., 2007). However, Studies 2 and 3

revealed potential power limitations. In Study 2, the observed effect size for the three-way interaction between mortality salience, routine salience, and self-esteem on DTA was smaller than expected.

For Study 2, given time and budget constraints, we planned for effect sizes of $R^2 \geq .09$, aligning with Study 1. This estimate was more conservative than Burke et al.'s (2010) $R^2 = .12$ and larger than the typical range recommended by Chen et al. (2023) of $R^2 = .01$ to $R^2 = .02$. However, the observed effect size of $R^2 = .03$ was smaller than anticipated, suggesting the sample size may not have been sufficient to detect these subtler effects

Nevertheless, the 50,000 bootstrap samples provide additional confidence in the stability of the observed interaction effect. As a robust resampling method, bootstrapping simulates numerous samples to assess the precision of estimates, thereby confirming the reliability of the findings within the existing dataset (Efron & Tibshirani, 1993; Hayes, 2017).

Although the study's findings must be interpreted with caution due to this empirical limitation, they offer a valuable foundation for future research on the RTM model. The present results, while modest, contribute to our understanding of the potential role of everyday routines in buffering existential anxiety and highlight important avenues for further investigation. One potential explanation for the smaller effect size is that the routine salience manipulation (contemplating a routine vs. a non-routine activity) may not have been potent enough to fully capture the psychological significance of routine engagement for all participants, possibly contributing to the smaller effect.

To address this, future research should include larger sample sizes to increase statistical power and better detect interaction effects. Additionally, instead of relying solely on hypothetical contemplation of routines, a more immersive approach could involve live experience sampling, where participants engage in their daily routines or non-routines in real time. This would provide a richer, more ecologically valid understanding of how routines

buffer against mortality salience and might produce stronger effects by capturing the impact of actual routine involvement on existential anxiety. Longitudinal designs or repeated measures could also help uncover more robust patterns over time. Future studies should continue to enhance generalizability by incorporating larger samples and refining the routine salience manipulation.

As in Study 2, the effect size in Study 3 was smaller than anticipated, and the study lacked sufficient power to detect smaller effects. While the 50,000 bootstrap samples provide some confidence in the stability of the findings, a G*Power analysis (Faul et al., 2007) indicated sufficient power to detect effect sizes of $R^2 > 0.09$, whereas the observed effect size was $R^2 = .04$. This suggests that a larger sample size may be necessary to detect smaller effects. Future studies should therefore prioritize larger samples to ensure adequate power. Despite this limitation, the findings of Study 3 offer a valuable starting point for exploring the complex interactions at play. Understanding the reasons for the smaller effect sizes can help inform strategies for improving study designs in future research, ensuring that these promising initial results can be further validated and expanded upon.

One plausible explanation for this effect size could be the lack of methodological control over participants' self-reported routines. Specifically, perceptions regarding the potential for improving or changing routines could significantly influence responses. For example, routines like house cleaning or managing laundry or dishes might be viewed as relatively amenable to improvement or change. In contrast, the perceived potential to improve or modify routines such as a morning commute could vary significantly based on geographic location, transportation method, or proximity to work. In addition to incorporating larger samples, future research should explore the sources of variability stemming from the qualitative nature of self-generated routines. Such a study could examine whether this variability predicts openness to routine change and whether these effects are reflected in

larger effect sizes. Additionally, replicating Study 3 with greater methodological control, such as having participants choose from a preset list of typical everyday routines, could help standardize the measurement of openness to routine change and potentially yield more robust findings.

Affect vs. Behavior

Following a mortality salience manipulation, the present studies assessed the appeal of everyday routines, death-thought accessibility following routine salience, and self-reported openness to change established routines. These diverse measurements shed light on the nuanced cognitive and affective elements of routine terror management. However, while positive attitudes toward routines and the cognitive buffering effects conferred by routine salience suggest a psychological reliance on routines, these findings have limited implications for human behavior. The well-established disconnect between attitudes and behaviors (Haider et al., 2019; Munro et al., 2023; Sniehotta et al., 2005) cautions against interpreting these findings as evidence of behavioral reliance on routines. Therefore, to comprehensively validate the RTM model, future research must include behavioral measures that directly assess the impact of routine engagement on managing mortality awareness.

Future Directions

Avni-Babad (2011), as discussed in Chapter III, conducted an innovative investigation into routine behavior within the everyday context of university classroom seating. Their study demonstrated that individuals' consistent selection of the same seat without formal seating assignments signifies a profound reliance on routines for a sense of comfort and control. By integrating self-reports with photographic evidence to examine seating patterns, Avni-Babad developed a rigorous methodological framework. This framework offers valuable insights into the role of routine behaviors in psychological coping, suggesting its potential applicability in broader research contexts.

Applying Avni-Babad's (2011) innovative method to adapt Studies 1–3 could yield valuable insights into the impact of mortality awareness on individuals' reliance on everyday routines. Envision an experiment in a familiar classroom setting, where the participant receives instructions to sit outside their routine seating area. Following a mortality salience manipulation and a subsequent delay, the participant faces a choice: return to their routine seating or remain where they are. By adapting this methodology to the RTM model, researchers can observe behavioral evidence supporting routine terror management. Comparing DTA and participants' willingness to commit to altered seating arrangements in routine versus non-routine seating could offer further insights. Overall, this approach promises to broaden our empirical understanding of routine terror management and deepen our conceptualization of how routines offer psychological security from the impact of mortality awareness.

Additionally, the sense of safety provided by routines may not be the only mechanism underlying routine terror management. The buffering effects of everyday routines may engage other dimensions of psychological security, warranting further investigation. For instance, studies by Kay et al. (2008; 2009) suggest that perceiving everyday experiences as structured and predictable fosters a sense of control, which has been shown to mitigate the effects of mortality reminders (Landau et al., 2015). Therefore, at the core of the buffering effect of everyday routines could lie a fundamental sense of control (Lachman & Weaver, 1998). Supporting this notion, a large body of research suggests that an environment characterized by order and predictability can foster a sense of control over events that appear random and uncontrollable, such as death (see Swanson & Landau, 2019). Therefore, the ability of everyday routines to impart a sense of control may be a key component of their protective function against the impact of mortality awareness.

In sum, our findings illuminate a tendency among individuals lower in self-esteem to cling to their everyday routines when confronted with mortality reminders. This trend bears significant implications for the RTM model, which theorizes about qualitative differences in individuals' routines based on their self-esteem levels. Specifically, the RTM model posits that those lower in self-esteem hold less adaptive routines—less aligned with prevailing cultural standards—compared to the more adaptive routines of individuals higher in self-esteem. This distinction raises critical questions about the routines implicated in the structural role of routine terror management. The next chapter examines the RTM model's claims, testing whether a relationship exists between the adaptiveness of everyday routines and levels of self-esteem.

Future research could benefit from investigating the descriptions participants provide during routine salience inductions to assess the adaptiveness of these routines, thereby bridging the two lines of research within the RTM model framework. Delving into participants' narrative accounts could offer nuanced insights into how individuals with varying levels of self-esteem perceive and articulate their reliance on routines in the face of mortality reminders. Such qualitative analysis might uncover whether individuals lower in self-esteem are more likely to seek out non-adaptive or adaptive routines after being reminded of mortality and shed light on the psychological processes underpinning these choices. Understanding these processes in greater detail could reveal critical factors that influence the effectiveness of routines as a coping mechanism, offering valuable guidance for designing targeted interventions.

Exploring the impact of situational self-esteem manipulations on the tendency toward everyday routines following mortality reminders is a promising research avenue (see Harmon-Jones, 1997; Routledge et al., 2010). Given the established relationship among mortality reminders, everyday routines, and self-esteem, such manipulations might unveil

how these factors interact to shape the appeal of routines and openness to routine change. This line of research is pivotal for developing interventions that counter maladaptive routines and support individuals, especially those lower in self-esteem, during moments of heightened vulnerability to mortality concerns. Insights from these studies promise to deepen our understanding of the psychological mechanisms for coping with mortality awareness and enrich the RTM model by elucidating the complex dynamics between mortality awareness, self-esteem, and everyday routines. In doing so, future studies can lead to innovative strategies that bolster psychological well-being and promote positive behavioral changes.

Concluding Remarks

In the present studies, we employed a commonly used passage from Albert Camus' (1957) The Growing Stone as a neutral delay task between the mortality salience manipulation and the measurement of dependent variables (e.g., Greenberg et al., 1994; Harmon-Jones et al., 1997; see Appendix A). While this passage served its purpose of allowing participants to shift away from explicit thoughts of death, Camus' existentialist themes, which permeate his works, may have unintentionally influenced participants' processing of the mortality salience manipulation.

The passage's reflective descriptions of isolation, darkness, and nature could have fostered existential introspection in both the mortality salience and aversive control conditions, potentially reducing the starkness of the comparison between the two groups. This shared reflective state may have dampened the distinctiveness of responses, contributing to smaller observed effect sizes. As a result, future studies will employ a more strictly neutral delay task to minimize any unintended cognitive or emotional influence. This adjustment will ensure that participants' responses are shaped solely by the experimental primes, leading to a more precise assessment of the effects of mortality salience and control conditions.

As we continue to unravel the complex ways in which mortality awareness shapes human behavior and cognition, our objective extends beyond merely understanding these processes. Our aim is to apply these insights to create pathways that not only address the existential challenges posed by mortality but also enhance resilience and well-being in diverse contexts. By bridging the gaps in our understanding and applying the knowledge gained, we can foster a future where mortality awareness enriches the human experience rather than diminishes it. In this light, the exploration of everyday routines, self-esteem, and their interaction within the RTM model is not merely an academic pursuit but a meaningful step toward empowering individuals to live more intentional, purposeful lives in the face of mortality.

V: Escaping the Mortal Grind

Examining the Relationship Between Everyday Routines and Existential Escape

Abstract

We investigated the Routine Terror Management Model (RTM), hypothesizing that adaptive everyday routines are positively associated with self-esteem and beliefs in the importance and achievability of cultural standards. Utilizing the novel Cross-Dimensional Adaptive Routines Inventory (XDAR), which demonstrated high reliability ($\alpha \geq .84$), we measured adaptive routines across six life domains. Findings from our studies showed that higher XDAR scores (in contrast to lower XDAR scores) predicted higher self-esteem and stronger beliefs in the importance ($\alpha = .83$) and achievability ($\alpha = .95$) of cultural standards (Studies 4–6). Further, we explored responses to mortality reminders among individuals lower in adaptive routines. Contrary to predictions, mortality reminders (compared to a control topic) failed to motivate participants lower in adaptive routines to bolster beliefs in the importance and achievability of cultural standards (Studies 5–6). Subsequently, it was predicted and found that participants lower in adaptive routines (– 1 *SD* from the XDAR mean) exhibited increased self-escape motivation when exposed to mortality reminders (compared to a control topic). Conversely, participants with higher XDAR scores (+ 1 *SD*) expressed lower self-escape motivation that was unprovoked by mortality reminders (Study 7). These findings suggest that individuals lower in adaptive routines are more vulnerable to mortality reminders and may be inclined toward existential self-escape. The implications of these findings for the RTM model are discussed, emphasizing the need to further explore the mechanisms by which deficiencies in adaptive routines influence the motivation for existential self-escape.

Introduction

Drawing on the work of Søren Kierkegaard and other preceding existential theorists, Ernest Becker (1973) proposed that the human awareness of mortality creates the potential for overwhelming existential anxiety. Crucially, if this anxiety were experienced without mitigation, many effective forms of thought and behavior would be impossible (p. 96). However, people can buffer against the impact of mortality awareness by adopting social roles and becoming absorbed in their everyday routines (also see Fromm, 1956; Heidegger, 1927/2010; Kierkegaard, 1849/1997a). According to Becker (1973), one benefit of these routines is that they can reduce the cultural standards of one's social roles into outcomes of automatic and pre-deliberated action (p. 87).

Building on the work of Ernest Becker, terror management theory (TMT; Greenberg et al., 1986) proposes that people buffer the potential for existential anxiety by investing in an ordered and predictable cultural worldview, internalizing its standards, and building their lives around achieving those standards. By aligning with cultural standards, people develop self-esteem, which imparts a sense of safety and the promise that some part of themselves, such as their soul, children, values, or legacy, will endure beyond death (see Pyszczynski et al., 2004). Together, the cultural worldview and self-esteem, dubbed the cultural anxiety buffer, reduce the impact of mortality awareness. As we will discuss, the RTM model extends TMT by proposing that adaptive everyday routines embody this alignment with cultural standards, fortifying the psychological mechanisms that reduce the impact of mortality awareness.

Research grounded in TMT consistently shows that mortality reminders amplify efforts to uphold faith in the cultural worldview and bolster self-esteem (see Burke et al., 2010; Pyszczynski et al., 2015 for reviews). Previous research has emphasized the importance of maintaining self-esteem and faith in the cultural worldview. This body of work

suggests that individuals who struggle to uphold these central components of the cultural anxiety buffer are more vulnerable to the impact of mortality awareness. Consequently, they may resort to strategies such as avoiding or reducing self-awareness when faced with reminders of mortality (i.e., existential self-escape; Wisman et al., 2015; see also Wisman, 2006; and related studies by Arndt et al., 1998; Moynihan et al., 2021; Silvia, 2001). Despite ample evidence emphasizing the importance of the cultural worldview and self-esteem as a buffer against the impact of mortality awareness, TMT research has overlooked one common way people may regularly support and maintain self-esteem and faith in the cultural worldview: their everyday routines.

The RTM Model

Building on TMT, the Routine Terror Management Model (RTM) proposes that everyday routines that align with cultural standards can reinforce beliefs in the importance and achievability of cultural standards and bolster self-esteem. The present studies delve into this cultural dimension of routine terror management by examining how individual differences in adaptive routines—both higher and lower levels—relate to self-esteem and beliefs in the importance and achievability of cultural standards. Additionally, we investigate how individuals lower in adaptive routines respond to mortality reminders, specifically in the motivation to bolster beliefs in the importance and achievability of cultural standards or to seek self-escape.

Adaptive Routines

Central to the cultural dimension of routine terror management, the RTM model views "adaptive routines" as everyday routines that align with cultural standards. This definition of adaptive routines is consistent with that of mainstream psychological perspectives. For example, the American Psychological Association defines adaptive behavior as "the level of everyday performance of tasks that is required for a person to fulfill

typical roles in society, including maintaining independence and meeting cultural expectations regarding personal and social responsibility" (VandenBos, 2007, p. 18). Accordingly, adaptive routines include those everyday routines conducive to cultural standards across a wide range of areas, including physical fitness, domestic/household responsibilities, and work/school domains.

The Cultural Worldview

According to TMT, maintaining beliefs in the importance and achievability of cultural standards is essential for upholding faith in the cultural worldview and buffering the impact of mortality awareness (Pyszczynski et al., 2004; Wisman et al., 2015). Drawing on the RTM model, the present work builds on the assumption that adaptive routines, embodying a consistent alignment with cultural standards, reinforce beliefs in cultural standards' importance and achievability.

Prior research supports a link between adaptive routines and beliefs in the importance and achievability of cultural standards, indicating that continued efforts toward a goal or standard reinforce these beliefs. For example, studies demonstrate that goals aligned with personal values, known as self-concordant goals, promote ongoing effort toward goal achievement and foster increased future self-concordance (Sheldon & Elliot, 1999; Sheldon & Hauser-Marko, 2001; see also Deci & Ryan, 2008). Additionally, Jacobs et al. (2010) show that beliefs in a goal's achievability significantly boost sustained efforts toward that goal, in line with Bandura's (1977) foundational work on self-efficacy. This body of empirical evidence suggests that everyday routines aligned with cultural standards reinforce beliefs that these standards are important and achievable. Conversely, individuals with lower levels of adaptive routines may face doubts about the importance and achievability of these standards.

Self-Esteem

In TMT, self-esteem is viewed as a culturally based construction where individuals achieve a sense of personal value by aligning with the standards of their culture that they find personally important[12] (Pyszczynski et al., 2004; cf. Crocker & Wolfe, 2001). The RTM model posits a complementary account of how individuals develop and maintain self-esteem. The model suggests that when people consistently align with the standards of their culture that they find personally important, this alignment manifests in adaptive routines. Thus, both TMT and the RTM model hold that orienting one's everyday life toward achieving cultural standards is vital to building and maintaining self-esteem (see Ch. III of this thesis).

Supporting the RTM model's account, traditional behavioral psychology posits that actions aligned with desired outcomes tend to be reinforced and repeated, as evidenced by foundational works (e.g., Pavlov, 1927/1960; Skinner, 1938). This principle is corroborated by contemporary research, which indicates that adaptive routines often stem from the pursuit of personal goals (Neal et al., 2012; Wood & Neal, 2007). Synthesizing these perspectives, a broad array of studies suggest that personal values and goals can drive repetitive behaviors, leading to the formation of habits and routines (for a review, see Wood et al., 2021). Consistently, research has shown a positive relationship between adaptive routines and self-esteem, reinforcing the role of structured, value-aligned behaviors in bolstering self-worth (Hoare & Cossgrove, 1998; Hudd et al., 2000; Islam, 2021).

In sum, the RTM model suggests that self-esteem is bolstered by developing and maintaining adaptive routines that align with an individual's values and goals within a broader system of cultural standards. Further, most importantly, individuals lacking adaptive routines may struggle to achieve or maintain self-esteem. The RTM model's account of the

[12] TMT's concept of self-esteem is also consistent with the American Psychological Association's definition of self-esteem which highlights aspects such as the individual's physical self-image, their view of accomplishments and capabilities, adherence to personal values, as well as perceptions of success and how others respond to the individual (VandenBos, 2007).

relationship between adaptive routines and self-esteem is consistent with traditional behavioral psychology and contemporary research on habit and routine development.

Responding to Mortality Reminders

Beliefs in the importance and achievability of cultural standards are crucial for sustaining self-esteem. Simply put, if cultural standards are not viewed as important, achieving cultural standards cannot bolster self-esteem (Pyszczynski et al., 2004; cf. Crocker & Wolfe, 2001). Correspondingly, if cultural standards are perceived as unachievable, individuals may lack the motivation to pursue cultural standards, further undermining self-esteem (Wisman et al., 2015; cf. Becker, 1971). The present research centers on identifying how individuals lower in adaptive routines—generally lacking in self-esteem and beliefs in the importance and achievability of cultural standards—might respond to mortality reminders. Based on the RTM model's assertion that lower levels of adaptive routines can lead to lower self-esteem, we first build on the assumption that individuals lower in adaptive routines may respond to mortality reminders in a manner like those lower in self-esteem.

Prior research suggests that mortality reminders can prompt individuals lower in self-esteem to seek out and adhere to cultural standards, particularly when cultural standards are not explicitly challenged. For example, in situations where worldview threats are not induced, mortality reminders have been shown to encourage individuals low in self-esteem (and not those high in self-esteem) to search for more meaning in life, engage in health-promoting behaviors, and demonstrate greater adherence to overarching cultural norms (Juhl & Routledge, 2014; Kashima et al., 2004; Taubman-Ben-Ari & Findler, 2005). In contrast, when cultural standards are criticized or threatened, mortality reminders tend to motivate individuals high in self-esteem (and not those low in self-esteem) to defend these cultural standards (e.g., Baldwin & Wesley, 1996; Harmon-Jones et al., 1997; Juhl & Routledge, 2014; McGregor et al., 2007).

Converging on the RTM model, mortality reminders may prompt individuals lower in adaptive routines to bolster beliefs in the importance of cultural standards. This initial response, however, is met with the challenge of perceived achievability (see also Duval & Wicklund, 1972). Individuals lower in adaptive routines might doubt the achievability of cultural standards, potentially diminishing the motivation to increase their endorsement of these standards (Bandura & Locke, 2003; Seligman, 1972). This dynamic may create a psychological impasse, where doubts about achievability necessitate alternative ways to manage the impact of mortality awareness.

From another angle, mortality reminders have been shown to motivate self-serving biases, potentially enhancing perceptions of achievability (Dechesne et al., 2003; Mikulincer & Florian, 2002; Paulhus & Levitt, 1987). Similarly, mortality reminders might motivate individuals to bolster beliefs in the achievability of cultural standards, thereby supporting self-esteem (cf. Lightsey et al., 2006; Smith, 1989). Indeed, a broad base of studies has shown that mortality reminders can prompt self-esteem striving (see Pyszczynski et al., 2004 for review).

However, in cases where self-serving biases do not emerge (see Routledge et al., 2010; Landau & Greenberg, 2006), individuals, particularly those lower in adaptive routines, may experience feelings of futility (see Maier & Seligman, 1976; Duval & Wicklund, 1972). In turn, some individuals, particularly those lower in adaptive routines, may engage in existential self-escape: seeking to avoid or reduce self-awareness when confronted with reminders of mortality (Wisman et al., 2015). Thus, while mortality reminders may inspire individuals to bolster beliefs in the achievability of cultural standards in some contexts, in other contexts, the response may lead to seeking solace in existential self-escape. Considering these theoretical considerations, we now explore our hypotheses derived from the RTM model.

Overview and Predictions

We present a series of three studies investigating the RTM model's associations between adaptive routines, self-esteem, and beliefs in the importance and achievability of cultural standards. This series culminates in a fourth study examining the potential link between adaptive routines and existential self-escape. To support these investigations, we developed the Cross-Dimensional Adaptive Routines Inventory (XDAR), designed to assess individual differences in adaptive routines across six domains of everyday life.

Drawing on the RTM model, we predicted that individuals higher in adaptive routines, reflected by higher XDAR scores, would exhibit higher self-esteem and report stronger beliefs in the importance and achievability of cultural standards. Conversely, those lower in adaptive routines were predicted to exhibit lower self-esteem and report weaker beliefs in the importance and achievability of cultural standards. Additionally, we hypothesized that mortality reminders could stimulate endorsement of the cultural worldview, particularly prompting those lower in adaptive routines to bolster their beliefs in the importance and achievability of cultural standards. If mortality reminders do not elicit this bolstering effect, our theorizing suggests that individuals lower in adaptive routines might be more inclined toward existential self-escape as a coping strategy.

Study 4: Routines and Self-Esteem

Study 4 introduces and validates the novel XDAR inventory to measure individual differences in adaptive everyday routines as a critical tool for our investigation. Initial surveys of existing instruments—including the Family Routines Inventory (Boyce et al., 1983), Child Routines Inventory (Sytsma et al., 2001), Adolescent Routines Questionnaire (Piscitello et al., 2019), and Bedtime Routines Questionnaire (Henderson & Jordan, 2010)—revealed a void in their applicability to our broader research aims, as they were constrained by specific demographic or familial parameters.

The XDAR was conceived to encompass a wide range of adaptive routines relevant to adult life across various domains, surpassing the limitations of earlier inventories. Informed by current instruments and the criteria for adaptive behavior set by the American Psychological Association, the XDAR assesses routine adaptiveness in six domains of everyday life: morning, evening, domestic/housekeeping, physical activity, meals/snacking, and work/school. Within each domain, we included two standard-scored items and two reverse-scored items to capture tendencies toward specific adaptive routines and the adaptiveness of other routines based on their respective outcomes. For instance, "I tend to go to bed at roughly the same time every night" and "I tend to procrastinate sleeping once I'm in bed" target specific routine tendencies. In contrast, others, such as "My work (or school) routine helps me focus on priorities and avoid distractions" or "At work (or school), I don't have enough time to get important things done," evaluate the overall adaptiveness of routines relative to targeted outcomes.

In line with psychological assessment standards, the new measure's validity was also gauged against the empirically supported 10-Item Big Five Inventory (BFI-10; Rammstedt & John, 2007; see John & Srivastava, 1999). Per the RTM model's conceptualization of adaptive routines, we hypothesized a positive correlation between XDAR scores and conscientiousness, reflecting the tendencies of individuals higher in conscientiousness to be organized, persistent, goal-driven, self-efficacious, and adherent to cultural standards (McCrae & John, 1992; Roberts et al., 2005). Conversely, we anticipated a negative correlation with neuroticism, considering that individuals higher in neuroticism may be prone to procrastination and other maladaptive coping mechanisms that disrupt consistency and long-term planning (Cooper et al., 2013; Kokkonen & Pulkkinen, 2001; Peters et al., 2020).

While we had specific hypotheses regarding conscientiousness and neuroticism, our study also sought to explore the potential relationships between XDAR scores and the other

three dimensions of the Big Five personality traits—openness, agreeableness, and extraversion—without any a priori predictions. This exploratory analysis investigated the relationship between the XDAR and common personality dimensions to reveal the broader personality correlates of adaptive routines.

Utilizing the validated XDAR, Study 4 investigates the RTM-based hypothesis that adaptive everyday routines bolster self-esteem. While the connection between self-esteem and certain XDAR items (e.g., household chores or maintaining a consistent bedtime) may not be immediately apparent, psychological perspectives have long maintained that adaptive routines can lay a foundation for pursuing higher-level goals (e.g., De Ridder & Gillebaart, 2017; Dunn, 2000; James, 1890), potentially including those that directly influence self-esteem (e.g., Crocker & Wolfe, 2001). Thus, we predicted that individuals higher in adaptive routines would exhibit higher self-esteem (Prediction 4.1), while individuals lower in adaptive routines would exhibit lower self-esteem (Prediction 4.2).

Method

Participants

A random sample of 160 US adults[13] (N = 160, 59% female, age 20–76, M_{age} = 44, SD = 15) were compensated $1.50 for their participation. Participants were recruited from Amazon Mechanical Turk again using the CloudResearch Approved List and the same enhanced data quality controls used in Studies 1–3. No data were excluded from the study.

[13]An a priori power analysis was conducted using G*Power 3.1.9.7 (Faul et al., 2007) to estimate the necessary sample size for achieving at least 80% power. This analysis was based on an average effect size of F^2 = .14 (equivalent to R^2 = .12), as reported in an extensive review of mortality salience effects (Burke et al., 2010; see also Yen & Cheng, 2013 for similar estimates). With an alpha level of 0.05 and power of 0.80, the minimum sample sizes required are N = 84 for a bivariate correlational test and N = 59 for a simple linear regression with one predictor. Our study exceeded these requirements with a sample size of N = 160, ensuring adequate statistical power for effect sizes of $R^2 \geq .04$.

Design

We employed a correlational design to test the reliability of the novel XDAR inventory and investigate the relationships between adaptive routines, the Big Five personality dimensions, and our key dependent variable, self-esteem. Cronbach's alpha was used to evaluate the internal consistency of the XDAR.[14] Correlational analyses examined the associations between XDAR scores and the Big Five dimensions. Additionally, we utilized both correlational and linear regression analyses to explore how adaptive routines predict self-esteem.

Procedure

After completing an "activities and interests" questionnaire that conveyed a cover story focusing on personality and everyday life, participants' self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This scale includes ten items, such as "I feel as if I am able to do things as well as most other people." and "All in all, I am inclined to feel like a failure" (reverse scored). Responses were assessed using a 6-point agreement format, where 1 = *strongly disagree*, and 6 = *strongly agree*. After recoding the reverse-scored items, self-esteem scores were computed as the mean of responses across the 10 items, with higher scores indicating higher levels of self-esteem ($M = 4.64$, $SD = 1.19$, $\alpha = .94$).

Next, participants completed the 10-Item Big Five Inventory (BFI-10; Rammstedt & John, 2007), which assesses personality traits. Each item prompts participants to reflect, "I see myself as someone who..." and includes descriptions like "does a thorough job" (conscientiousness) and "gets nervous easily" (neuroticism). Responses were assessed using a

[14] In Study 4, a factor analysis was not conducted due to the relatively small sample size ($N = 160$), which is below the recommended threshold for reliable factor analysis of a multidimensional scale like the XDAR (Tabachnick & Fidell, 2013; Comrey & Lee, 1992). Additionally, the primary focus of the study was not on the underlying structure of the XDAR scale but rather on testing the combined effect of routines across multiple life domains on existential protection. A more comprehensive factor analysis, conducted with a larger combined sample ($N = 905$) from Studies 4 through 7, is provided in Appendix C for further insight into the structure of the XDAR scale.

5-point agreement format, where 1 = *strongly disagree*, and 5 = *strongly agree*. After recoding the reverse-scored items, BFI scores for each personality trait were calculated by averaging the responses to the two items corresponding to each trait. This scoring procedure yielded scores for extraversion ($M = 2.58$, $SD = 1.14$, $\alpha = .71$), agreeableness ($M = 3.43$, $SD = 1.06$, $\alpha = .55$), conscientiousness ($M = 4.07$, $SD = .88$, $\alpha = .66$), neuroticism ($M = 2.83$, $SD = 1.33$, $\alpha = .86$), and openness to experience ($M = 3.45$, $SD = 1.03$, $\alpha = .25$), with higher scores representing higher levels of the respective traits.

Finally, participants completed the XDAR inventory. Instructions specified, “Here are some statements relating to everyday routines that reflect the experience of some people in daily life. Please indicate the extent to which you agree with each statement with regard to yourself.” Participants indicated the extent of their agreement with each item on a scale of 0 to 100, where 0 = *completely disagree* and 100 = *completely agree*. After recoding the reverse-scored items, XDAR scores were computed as the mean of participants’ responses across the 24 items ($M = 62.82$, $SD = 13.74$, $\alpha = .86$), with higher scores indicating higher levels of adaptive routines.

Results

After confirming the satisfactory reliability of the XDAR, which underscores the robustness of the inventory for assessing adaptive routines, we compiled a detailed breakdown of each item’s mean and standard deviation. This data is crucial for understanding the distribution and central tendencies of the responses and is presented in Table 1 on the following page.

Table 1

Descriptive Statistics for Each XDAR Inventory Item

* *reverse-scored*	*M*	*SD*
Morning		
1. I tend to wake up at roughly the same time every morning.	77.75	22.13
2. My mornings tend to be rushed and chaotic because something always comes up. *	21.41	21.98
3. My mornings are mostly smooth and peaceful.	70.10	25.37
4. The day always seems to sneak up on me. *	35.08	29.76
Evening		
5. I tend to go to bed at roughly the same time every night.	72.34	24.15
6. I tend to stay up late, even when I don't need to. *	44.64	34.49
7. Before I know it, I feel myself drifting away when I'm in bed.	55.56	30.43
8. If I want it or not, my worrisome thoughts keep me up at night. *	35.64	29.74
Domestic/Housekeeping		
9. I routinely set aside time in my day for most household chores.	56.46	29.83
10. I tend to leave most household chores until they get out of hand. *	26.49	27.60
11. As a habit, I always leave my important things (e.g., keys) in the same spot.	76.89	24.69
12. I tend to forget where I put small things such as keys or a wallet. *	22.53	25.15
Physical Activity		
13. I routinely set aside time in my day for physical exercise.	49.77	34.59
14. During the week, I dedicate my free time to vegging out in front of my favorite media. *	45.88	29.56
15. I naturally keep a good posture, whether sitting or standing.	39.19	28.31
16. When at my desk or comfortable seating, I may go hours without standing before realizing it. *	44.61	31.32
Meals/Snacking		
17. I tend to plan my meals so that I receive proper nutrition.	54.58	29.25
18. I'm sure to have my favorite sweet or salty snack available throughout the day. *	41.07	31.35
19. Eating healthy is second nature to me.	46.91	29.63
20. When walking past a plate of sweets or cookies, I can't resist taking one. *	43.58	32.08
Work/School		
21. My work (or school) routine helps me focus on priorities and avoid distractions.	61.24	27.01
22. At work (or school), I don't have enough time to get important things done. *	26.55	26.80
23. My workday (or school day) runs like a well-oiled machine.	58.89	28.00
24. My workday (or school day) tends to feel out of control. *	24.64	26.40

Next, we conducted bivariate correlational analyses between XDAR scores, self-esteem, and BFI-10 scores to explore how adaptive routines relate to common personality traits. Consistent with our predictions, the results revealed that XDAR scores exhibited a strong positive correlation with both self-esteem (r = .61) and conscientiousness (r = .63) and a moderate to strong negative correlation with neuroticism (r = –.49). All correlations and descriptive statistics for the other personality dimensions assessed by the BFI-10 are presented in Table 2.

Table 2

Descriptive Statistics and Correlations for Study 4 Variables

	Variable	*M*	*SD*	1	2	3	4	5	6	7
1.	XDAR	62.82	13.74	-	.61**	.21**	.27**	.63**	–.49**	.15
2.	Self-Esteem	4.64	1.19	.61**	-	.38**	.39**	.55**	–.62**	.14
3.	Extraversion	2.58	1.14	.21**	.38**	-	.28**	.26**	–.35**	.17*
4.	Agreeableness	3.43	1.06	.27**	.39**	.28**	-	.27**	–.32**	.07
5.	Conscientiousness	4.07	.88	.63**	.55**	.26**	.27**	-	–.35**	.14
6.	Neuroticism	2.83	1.33	–.49**	–.62**	–.35**	–.32**	–.35**	-	–.17*
7.	Openness	3.45	1.03	.15	.14	.17*	.07	.14	–.17*	-

*p < .05. (2-tailed), **p < .01. (2-tailed)

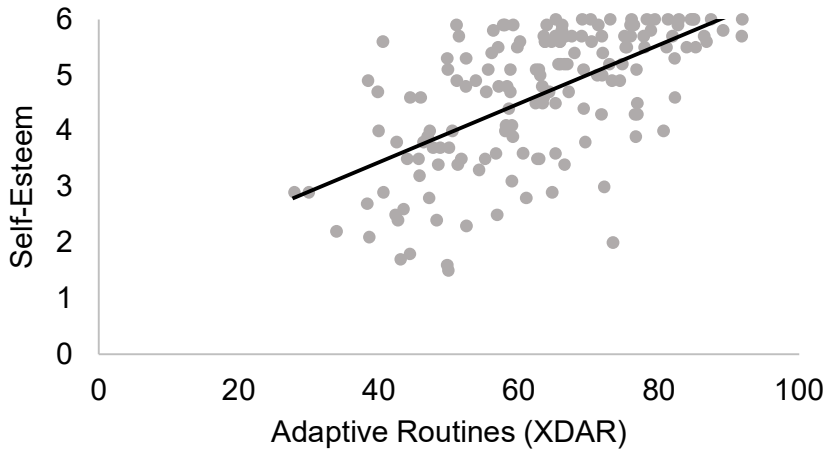
Next, we performed a simple linear regression analysis to test the predictions that individuals higher in adaptive routines would exhibit higher self-esteem, and those lower in adaptive routines would exhibit lower self-esteem. The results indicated that the regression model was significant, $F(1, 158) = 93.01$, $p < .001$, $R^2_{\text{adjusted}} = .37$.[15] This finding suggests that XDAR scores explain a substantial portion of the variance in self-esteem. Specifically, participants' self-esteem increased by .05 points for each point increase on the XDAR scale

[15] This effect size (R^2 = .37) indicates that XDAR scores significantly explained more variance in self-esteem than would be expected by chance, and the sample size of N = 160 provided adequate power according to our a priori power analysis.

(B = .05, SE = .01, t = 9.64, p < .001), indicating a direct positive relationship between adaptive routines and self-esteem (see Figure 5). Accordingly, as predicted, individuals higher in adaptive routines exhibited higher self-esteem (Prediction 4.1), while those lower in adaptive routines exhibited lower self-esteem (Prediction 4.2).

Figure 5

Relationship Between Adaptive Routines (XDAR) and Self-Esteem, Illustrated with a Regression Line



Discussion

The novel XDAR presented in Study 4 is a reliable self-report measure with potential applications in various contexts where assessing individuals' level of adaptive routines is valuable. The validation of the XDAR confirmed the predicted positive correlations with conscientiousness and neuroticism. The positive association between the XDAR and conscientiousness underscores the instrument's capacity to encapsulate the beneficial aspects of adaptive routines, which align with organized, goal-directed behaviors. Conversely, the negative correlation with neuroticism aligns with theoretical expectations regarding the disruptive influence of emotional instability on routine adherence. These findings affirm the

construct validity of the XDAR and highlight the potential of adaptive routines in fostering resilience against stress-related behaviors.

Furthermore, our results indicated positive correlations with the BFI traits of extraversion and agreeableness, enriching our understanding of the relationship between adaptive routines and other key personality dimensions. First, extraversion is characterized by a need for stimulation, activity, assertiveness, and interpersonal interaction (Digman, 1990). This propensity for cognitive and social engagement may lead individuals higher in extraversion to establish adaptive routines to optimize everyday responsibilities and enhance their capacity for engagement. This notion aligns with studies linking extraversion to a proactive personality and behavior (Bateman & Crant, 1993; Wang et al., 2019). Secondly, individuals higher in agreeableness, a trait associated with a general concern for social harmony and characterized by trustworthiness, altruism, kindness, and cooperation (Graziano & Tobin, 2009), are likely to value stable and harmonious social interactions. Consequently, individuals higher in agreeableness might utilize adaptive routines to foster stability in their lives, enabling them to be dependable and supportive in their social relationships (Fiese et al., 2002; Fles & Lakey, 2017). Our findings on the relationship between extraversion, agreeableness, and adaptive routines provide valuable insights into how individuals with different personality profiles navigate their environments and optimize their daily lives for enhanced social well-being.

Our results did not reveal a significant relationship between adaptive routines and openness to experience. This lack of a significant link is consistent with literature suggesting a more nuanced relationship between these constructs. Adaptive routines and openness to experience may influence each other positively and negatively, depending on how these routines are integrated into an individual's everyday life. When adaptive routines promote flexibility, personal growth, and exploration, these routines might enhance traits associated

with openness (Dunn, 2000; McCrae, 1987). On the other hand, if adaptive routines become overly rigid or an individual overly relies on the routine's structure, these routines might constrain or reduce the expression of openness (McCrae & John, 1992; Neuberg & Newsom, 1993).

Finally, utilizing the XDAR, the findings of Study 4 support the RTM model and shed light on the relationship between adaptive routines and self-esteem. As predicted, individuals with a higher XDAR exhibited higher self-esteem, while those with a lower XDAR exhibited lower self-esteem. These findings enhance our understanding of TMT by demonstrating a connection between adaptive routines and self-esteem. The XDAR inventory, specifically designed to assess routines in line with cultural standards of value[16], suggests a positive relationship between adherence to these standards and increased self-esteem. This notion supports TMT's proposition that closer alignment with cultural standards increases self-esteem (e.g., Pyszczynski et al., 2004). In conclusion, these results support our hypothesis and align with the RTM-based notion that adaptive everyday routines support self-esteem, contributing to both the RTM model and broader TMT literature. Following XDAR's validation against two established measures—self-esteem and BFI-10—we present the ensuing experimental studies.

Study 5: Routines and the Importance of Cultural Standards

Study 4 revealed that participants higher in adaptive routines (higher XDAR) exhibited higher self-esteem, whereas those lower in adaptive routines (lower XDAR) showed correspondingly lower self-esteem. Building on these findings, Study 5 aims to delve deeper into the impact of adaptive routines on the cultural anxiety buffer. This buffer, which mitigates the effects of mortality awareness, is theorized to rely on the continuous validation

[16] The notion that the XDAR effectively measures routines aligned with cultural standards is further supported by its strong positive relationship with the trait of conscientiousness. Conscientiousness, a dimension of the Big Five personality traits, has been shown to correlate with adherence to cultural norms and prescribed behaviors (Roberts et al., 2005).

and reinforcement of cultural standards (Becker, 1973; Greenberg et al., 1986; see also Berger & Luckmann, 1966; Hewitt, 2002). In this context, Study 5 examines the hypothesis, grounded in the RTM model, that adaptive routines can strengthen the cultural anxiety buffer by reinforcing beliefs in the importance of cultural standards. Accordingly, we predicted that participants higher in adaptive routines would report stronger beliefs in the importance of cultural standards (Prediction 5.1). Conversely, participants lower in adaptive routines were anticipated to report weaker beliefs in the importance of cultural standards (Prediction 5.2).

We also explored the possibility that mortality reminders could encourage individuals lower in adaptive routines to bolster their beliefs in the importance of cultural standards. Previous research suggests that mortality reminders can effectively prompt the endorsement of cultural standards, especially when the worldview is not explicitly challenged (e.g., Kashima et al., 2004; Taubman-Ben-Ari & Findler, 2005; also see Juhl & Routledge, 2014).[17] Informed by these prior studies, our study did not include a worldview threat manipulation. Accordingly, we predicted that mortality reminders (vs. a control topic) would particularly motivate individuals lower in adaptive routines to bolster their beliefs in the importance of cultural standards (Prediction 5.3).

Method

Participants

A random sample of 200 US adults[18] (N = 200, 58% female, age 20–77, M_{age} = 39, SD = 11) were compensated $1.50 for their participation. Participants were recruited from

[17] Specifically, Juhl and Routledge (2014) found that individuals low in self-esteem, after receiving reminders of mortality, exhibit an increased search for meaning in life. Based on this finding, we suggest that these individuals, particularly those lacking in existential defenses such as adaptive routines, may be more inclined to endorse prominent sources of meaning and value, such as salient cultural standards (see Steger et al., 2008).

[18] Consistent with the power, effect size, and alpha level criteria used in Study 4, the minimum sample size needed for a multiple linear regression with three predictors is N = 82. Our study exceeded these requirements with a sample size of N = 200, ensuring adequate statistical power for effect sizes of $R^2 \geq .06$.

Amazon Mechanical Turk again using the CloudResearch Approved List and the same enhanced data quality controls used in Study 4. No data were excluded from the study.

Design

We conducted a hierarchical multiple regression analysis to examine the impact of mortality reminders and adaptive routines on self-reported beliefs in the importance of cultural standards. Our regression model included a mortality salience manipulation (between subjects: reminders of mortality vs. reminders of television-watching), XDAR scores (continuous: mean-centered), and the interaction between these variables. Participants were randomly assigned to receive either reminders of mortality or reminders of television-watching.

Procedure

Initially, Study 2 followed the same procedure as Study 1. After completing the activities and interests questionnaire, participants completed the self-esteem scale (Rosenberg, 1965; $M = 4.42$, $SD = 1.13$, $\alpha = .92$). They then completed the BFI-10 (Rammstedt & John, 2007; see Table 3 for descriptive statistics) and the XDAR ($M = 59.26$, $SD = 14.01$, $\alpha = .84$). Next, participants were randomly assigned to receive mortality reminders or reminders of television-watching (e.g., Greenberg et al., 1992). Following the standard paradigm of TMT research (Greenberg et al., 1986; also see Cox et al., 2019), participants in the mortality reminder condition responded to two open-ended mortality reminders that read: “Briefly describe the emotions that the thought of your own death arouses in you” and “Jot down, as specifically as you can, what you think will happen to you physically as you die and once you are physically dead.” The neutral TV control condition, adapted from Greenberg et al. (1992), consisted of two comparable items regarding the experience of watching television (e.g., “Briefly describe the emotions that the thought of watching TV arouses in you”).

Also, following the standard TMT paradigm, after the mortality salience manipulation, participants completed the 20-item Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). Participants indicated the extent to which each of 10 positive affect items (e.g., *attentive; M* = 2.96, *SD* = .95, α = .92) and 10 negative affect items (e.g., *hostile; M* = 1.60, *SD* = .77, α = .93) reflected how they felt right at that moment (1 = *very slightly or not at all*, 5 = *extremely*). After completing the PANAS, participants completed a word search puzzle containing two innocuous words used in prior studies to provide an additional delay after the manipulations (e.g., Greenberg et al., 1994).

Finally, to assess beliefs in the importance of cultural standards (BICS), participants were presented with a list of 10 cultural values linked to subjective well-being in everyday life: a good job (e.g., Bowling et al., 2010), a successful relationship (e.g., Dush & Amato, 2005), good friends (e.g., Bukowski, 2003), happiness (e.g., Seligman, 2002, 2011), education (e.g., Kristoffersen, 2018), meaning in life (e.g., Zika & Chamberlain, 1992), wealth (e.g., D'Ambrosio, 2020), health (e.g., Ohrnberger et al., 2017), physical attractiveness (e.g., Diener et al., 1995), and respect (e.g., relational self-esteem; Du et al., 2017). Participants were subsequently prompted to indicate the extent to which the standards for each cultural value were personally important. Specifically, the instructions read, "We are interested in how people feel about the standards upheld by the culture of their society. For each topic below, on a scale of 0 to 100, indicate the extent to which you think cultural standards are important to you, where 0 = *of no importance to you (not important at all)* and 100 = *of utmost importance to you*." After recoding the reverse-scored items, final BICS scores were computed as the mean of participants' responses across all 10 items. Higher scores indicate stronger beliefs in the importance of cultural standards (*M* = 66.96, *SD* = 13.01, α = .83).

Results

First, bivariate correlational analyses were conducted between XDAR, BFI, and self-esteem scores to replicate prior findings demonstrating how adaptive routines relate to common personality characteristics. In line with the previous study, we found that the XDAR inventory shared a strong positive relationship with self-esteem (r = .54) and conscientiousness (r = .55) and a strong negative relationship with neuroticism (r = –.53). All correlations, including descriptive statistics, are presented in Table 3.

Table 3

Descriptive Statistics and Correlations for Study 5 Variables

	Variable	*M*	*SD*	1	2	3	4	5	6	7
1.	XDAR	59.26	14.01	-	.54**	.11	.19**	.55**	–.53**	.09
2.	Self-Esteem	4.42	1.13	.54**	-	.25**	.38**	.55**	–.58**	.07
3.	Extraversion	3.02	1.11	.11	.25**	-	.21**	.12	–.34**	–.10
4.	Agreeableness	3.97	1.02	.19**	.38**	.21**	-	.25**	–.41**	.06
5.	Conscientiousness	4.41	.96	.55**	.55**	.12	.25**	-	–.37**	.26
6.	Neuroticism	3.38	1.14	–.53**	–.58**	–.34**	–.41**	–.37**	-	.01
7.	Openness	4.22	.90	.09	.07	–.10	.06	.26**	.01	-

*p < .05. (2-tailed), **p < .01. (2-tailed)

Finally, we conducted a hierarchical multiple regression analysis to examine the impact of mortality reminders and adaptive routines on beliefs in the importance of cultural standards. We regressed participants' BICS scores on predictors in a stepwise manner. Following the guidelines by Aiken & West (1991), we entered the main effects at Step 1: mortality salience manipulation (dummy coded: 1 = mortality reminders, 0 = TV control), and adaptive routines, represented by XDAR scores (mean-centered). At Step 2, we entered the interaction between the mortality salience and adaptive routines.

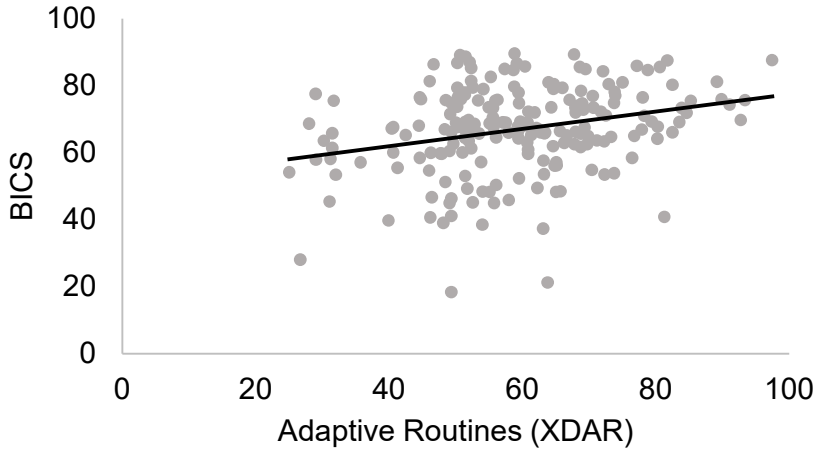
This analysis enabled us to test several predictions. First, we examined whether participants higher in adaptive routines would report stronger beliefs in the importance of cultural standards (higher BICS; Prediction 5.1) and whether those lower in adaptive routines would report weaker beliefs in the importance of cultural standards (lower BICS; Prediction 5.2). Secondly, we investigated whether mortality reminders (vs. the TV control) would particularly motivate individuals lower in adaptive routines to bolster their beliefs in the importance of cultural standards (increased BICS; Prediction 5.3).

At Step 1, the model explained a modest proportion of the variance in BICS scores (R^2_{adjusted} =.07)[19], where the main effect of XDAR was significant, $B = .26$, $SE = .06$, $t(197) = 4.07$, $p < .001$. Specifically, as XDAR scores increased, BICS scores also increased. Thus, consistent with Predictions 5.1 and 5.2, participants higher in adaptive routines reported stronger beliefs in the importance of cultural standards, whereas those lower in adaptive routines reported weaker such beliefs (see Figure 6). The main effect of mortality salience was non-significant ($p = .759$), aligning with our hypothesis that the impact of mortality salience on beliefs in the importance of cultural standards depends on levels of adaptive routines.

[19] The unique variance explained by XDAR was calculated using semi-partial correlations (part correlations). Squaring the semi-partial correlation revealed that XDAR uniquely explained 8% of the variance in BICS scores ($R^2_{\text{unique}} = .08$). This effect size suggests that the sample size of $N = 200$ provided adequate power, as determined by our a priori power analysis.

Figure 6

Relationship Between Adaptive Routines (XDAR) and Beliefs in the Importance of Cultural Standards (BICS), Illustrated with a Regression Line



At Step 2, upon introducing the interaction between mortality salience and XDAR scores, the proportion of the variance explained by the model remained unchanged (R^2_{adjusted} =.07). The main effect of XDAR continued to be significant (B = .32, SE = .09, $t(196) = 3.68$, $p < .001$), whereas the main effect of mortality salience remained non-significant (p = .766). Furthermore, the hypothesized interaction between mortality salience and XDAR was also non-significant (p = .327), indicating that adaptive routines did not significantly moderate the impact of mortality salience on BICS scores. Thus, contrary to Prediction 5.3, mortality reminders (compared to the TV control) did not motivate participants lower in adaptive routines to bolster their beliefs in the importance of cultural standards.

Discussion

Having confirmed a positive relationship between adaptive routines and self-esteem in Study 4, Study 5 turned to explore the relationship between adaptive routines and another critical component of the cultural anxiety buffer: belief in the importance of cultural standards. Consistent with our predictions, we found that participants higher in adaptive

routines reported stronger beliefs in the importance of cultural standards. In contrast, those lower in adaptive routines reported weaker such beliefs, lending support for the RTM-based hypothesis that adaptive routines might reinforce beliefs in the importance of cultural standards.

Additionally, Study 5 investigated whether mortality reminders would motivate individuals lower in adaptive routines to bolster their beliefs in the importance of cultural standards. Contrary to our expectations, the results indicated that mortality reminders did not significantly motivate these participants to bolster their beliefs. This lack of effect not only underscores the complexity of individual responses to mortality reminders but also highlights the need for further investigation to unravel underlying mechanisms and to identify potential confounds within the study.

Methodological Concerns

One plausible explanation for the observation that participants lower in adaptive routines (lower XDAR), were not motivated to bolster their belief in the importance of cultural standards could be a failure in the mortality salience manipulation. Conducting the study during the COVID-19 pandemic might have heightened baseline mortality salience, thereby rendering our experimental manipulation less effective. This possibility is supported by literature suggesting that pervasive mortality cues during the pandemic could have diminished the impact of our efforts (see Hu et al., 2020; also refer to Burke et al., 2010; Greenberg et al., 1986 on experiential mortality reminders). Future research conducted in similar contexts should include pilot studies to assess the effectiveness of mortality reminders within the specific socio-cultural environment. These pilot studies could measure participants' susceptibility to societal mortality cues and inform necessary adjustments to the type and intensity of the mortality salience manipulations utilized.

Another plausible explanation for the absence of mortality salience effects among individuals lower in adaptive routines could be attributed to the broad scope of our dependent variable. BICS was intentionally designed to encompass a wide range of cultural standards, complementing our predictor variable, XDAR, which measures adaptive routines across diverse domains of everyday life. This approach was chosen to address limitations in previous routine inventories and to reflect the broad spectrum of routines that might relate to a similarly broad array of cultural standards. While this inclusive method allows for comprehensive assessment, it may have inadvertently diluted the specific impact of mortality reminders on affirming the importance of any single cultural standard, thus complicating the detection of distinct effects. This methodology contrasts with many TMT studies, which typically focus on how mortality reminders motivate individuals to affirm faith in specific, personally relevant aspects of their cultural worldview (e.g., Rosenblatt et al., 1989; for further discussion on TMT research methods, see Cox et al., 2019). Therefore, future research could benefit from concentrating on more distinct domains of adaptive routines. Adopting such a focused approach would enable a more nuanced investigation into the relationships between specific aspects of the cultural worldview and the endorsement of associated cultural standards.

Addressing Methodological Concerns

In response to potential methodological concerns, we conducted a post-hoc analysis to confirm the viability of both our mortality salience manipulation and BICS as our dependent variable. This validation procedure involved repeating our original regression analysis, this time with self-esteem serving as the moderating variable. Drawing on prior research, we hypothesized that mortality reminders would particularly motivate individuals lower in self-esteem to bolster their beliefs in the importance of cultural standards (e.g., Kashima et al., 2004; Taubman-Ben-Ari & Findler, 2005). The aim of this analysis was to verify whether our

experimental manipulation and dependent variable were effectively manipulating and capturing the intended constructs, respectively.

Following the guidelines by Aiken & West (1991), we entered the main effects at Step 1: mortality salience manipulation (dummy coded: 1 = mortality reminders, 0 = TV control), and self-esteem scores (mean-centered). At Step 2, we entered the interaction between mortality salience and self-esteem. At Step 1, the model explained a moderate proportion of the variance in BICS scores (R^2_{adjusted} =.13), where the main effect of self-esteem was significant, B = 4.27, SE = .76, t(197) = 5.59, p < .001. Specifically, as self-esteem scores increased, BICS scores also increased. However, the main effect of mortality salience was non-significant (p = .822). At Step 2, upon introducing the interaction between mortality salience and self-esteem, the proportion of the variance explained by the model increased (R^2_{adjusted} =.15). The main effect of self-esteem remained significant (B = 6.15, SE = 1.06, t(196) = 5.81, p < .001). Conversely, the main effect of mortality salience remained non-significant (p = .821). Importantly, the interaction between mortality salience and self-esteem was significant (B = –3.81, SE = 1.51, t(196) = –2.53, p = .012), indicating that self-esteem significantly moderated the impact of mortality salience on BICS scores.

To further explore the interaction effect identified in the hierarchical multiple regression, we employed the PROCESS macro (Model 1; Hayes, 2017) to conduct a simple slopes analysis. This analysis assessed the effects of mortality reminders on BICS scores at ±1 SD from the centered mean of self-esteem. At –1 SD from the self-esteem mean, mortality salience (compared to the TV control) increased BICS scores, B = 4.68, SE = 2.40, t(196) = 1.95. However, this effect narrowly missed reaching statistical significance, p =.053. In contrast, at higher levels of self-esteem (+1 SD), the effect of mortality reminders on BICS scores was non-significant (p =.105), indicating no substantial impact compared to the TV control.

Next, we expanded our analysis to explore the impact of mortality reminders across the entire spectrum of self-esteem scores, aiming to pinpoint specific self-esteem levels where mortality reminders significantly influenced beliefs in the importance of cultural standards. Using the Johnson-Neyman technique, also known as floodlight analysis (Johnson & Neyman, 1936; see also Chew et al., 2024; cf. Lin, 2020), we found that at levels of self-esteem ≤ –1.03 *SD* from the mean, mortality reminders (compared to the TV control) led to significant increases in BICS scores, $B = 4.81$, $SE = 2.44$, $t(196) = 1.97$, $p = .050$.[20]

In sum, our post-hoc analysis revealed that mortality reminders particularly motivated individuals lower in self-esteem to bolster their beliefs in the importance of cultural standards. This pattern aligns with prior research indicating that mortality salience can lead to stronger affiliation with cultural norms among individuals lower in self-esteem, particularly in the absence of explicit worldview threats (e.g., Kashima et al., 2004; Taubman-Ben-Ari & Findler, 2005). Despite the inherent limitations of post-hoc analysis, such as potential biases and variable controls, these results enhance our understanding of the robustness and applicability of the BICS inventory, particularly in measuring the effects of mortality salience manipulation during the unique conditions of the COVID-19 pandemic.

These findings are consistent with previous research demonstrating that mortality reminders can prompt increased endorsement of cultural standards among this group, especially in the absence of worldview threat (see Juhl & Routledge, 2014; Kashima et al., 2004; Taubman-Ben-Ari & Findler, 2005), supporting the effectiveness of our experimental manipulations and measures. Despite the inherent limitations of post-hoc findings, this validation helps address concerns regarding the generality of our dependent variable and the

[20] This examination employing the Johnson-Neyman technique was conducted using the additional options available within the PROCESS macro (Hayes, 2017) for SPSS.

potential impact of the COVID-19 pandemic on the efficacy of our mortality salience manipulation.

The Next Defense

Consistent with the RTM model, another probable explanation for why individuals lower in adaptive routines were not motivated by mortality reminders to bolster their beliefs in cultural standards is that this type of defense may not align with their interests. The RTM model posits that when an individual's adaptive routines are aligned with cultural standards, these routines reinforce beliefs in the importance of these standards. This reinforcement, in turn, bolsters the individual's capacity to mitigate the unsettling effects of mortality reminders. However, for those lower in adaptive routines, the motivation to rally behind the importance of cultural standards in the face of mortality reminders may be diminished. One rationale for this argument is that a lack of adaptive routines could weaken one's belief in the personal achievability of these standards (see Bandura, 1977). In effect, when cultural standards are perceived as unachievable, individuals may not be interested in bolstering their beliefs in the importance of these standards. This perspective aligns with research beyond TMT, indicating that people tend to shy away from standards perceived as unachievable (see Bandura & Locke, 2003). Our subsequent study will explore this dynamic further, examining the relationship between adaptive routines, belief in the achievability of cultural standards, and the influence of mortality reminders on this belief.

Study 6: Routines and the Achievability of Cultural Standards

Consistent with the RTM model, Study 5 found that participants lower in adaptive routines reported weaker beliefs in the importance of cultural standards, in contrast to those higher in adaptive routines. However, mortality reminders did not motivate participants lower in adaptive routines to bolster their beliefs in the importance of cultural standards. This lack of motivation may stem from these individuals' weaker beliefs in the achievability of cultural

standards (see Bandura, 1977; Bandura & Locke, 2003). Building upon these insights, Study 6 tests the RTM-based hypothesis that adaptive routines reinforce beliefs in the achievability of cultural standards. This hypothesis draws on prior studies linking persistence with self-efficacy—the confidence in one's ability to act effectively and achieve desired results (e.g., Jacobs et al., 1984; Lent et al., 1984; see Bandura, 2001). Accordingly, we predicted that participants higher in adaptive routines would report stronger beliefs in the achievability of cultural standards (Prediction 6.1). Conversely, those lower in adaptive routines were expected to report weaker beliefs in the achievability of cultural standards (Prediction 6.2).

In prior studies, mortality reminders have been shown to motivate self-serving biases, potentially enhancing perceptions of achievability (Dechesne et al., 2003; Mikulincer & Florian, 2002; Paulhus & Levitt, 1987). Building on these findings, Study 6 explores whether mortality reminders can motivate individuals lower in adaptive routines to bolster beliefs in the achievability of cultural standards. Consistent with Study 5, Study 6 did not employ a worldview threat manipulation that would question the validity of cultural standards. In this context, we predicted that exposure mortality reminders (vs. a control topic) would motivate individuals lower in adaptive routines to bolster their beliefs in the achievability of cultural standards (Prediction 6.3).

Method

Participants

A random sample of 385 US adults[21] (N = 385, 58% female, age 19–84, M_{age} = 41, SD = 13) were compensated $1.50 for their participation. Participants were recruited from Amazon Mechanical Turk again using the CloudResearch Approved List and the same enhanced data quality controls used in Study 4–5. No data were excluded from the study.

[21] Consistent with the power, effect size, and alpha level criteria used in Studies 4 and 5, the minimum sample size required for a multiple linear regression with three predictors is N = 82. Our study exceeded these requirements with a sample size of N = 385, ensuring adequate statistical power for effect sizes of $R^2 \geq .03$.

Design

We conducted a hierarchical multiple regression analysis to examine the impact of mortality reminders and adaptive routines on self-reported beliefs in the achievability of cultural standards. Our regression model included a mortality salience manipulation (between subjects: reminders of mortality vs. reminders of dental pain), XDAR scores (continuous: mean-centered), and the interaction between these variables. Participants were randomly assigned to receive either reminders of mortality or reminders of dental pain.[22]

Procedure

In line with Study 5, participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965; $M = 4.50$, $SD = 1.15$, $\alpha = .93$), the BFI-10 (Rammstedt & John, 2007; see Table 4 for descriptive statistics), and the XDAR ($M = 60.45$, $SD = 13.39$; $\alpha = .84$). Next, participants were randomly assigned to receive reminders of mortality or reminders of dental pain (Hays & Schimel, 2018). After the mortality salience manipulation, participants filled out the PANAS (Watson et al., 1988), assessing positive affect ($M = 2.93$, $SD = .88$, $\alpha = .91$) and negative affect ($M = 1.67$, $SD = .83$, $\alpha = .93$). Following the PANAS, participants completed the same distraction task from Study 5.

Finally, to assess beliefs in the achievability of cultural standards (BACS), participants were presented with the same list of 10 cultural values utilized in Study 5. Participants were then asked to indicate the extent to which the standards for each cultural value were personally achievable. Specifically, the instructions read, "We are interested in how people feel about the standards upheld by the culture of their society. For each topic below, on a scale of 0 to 100, indicate the extent to which you think cultural standards are

[22] Due to the uneven number of participants, the dental pain control condition included one additional participant. Analyses were conducted with and without this participant to assess the impact on significance and statistical power. Results indicated that the inclusion or exclusion of this extra participant did not affect the significance or power of the findings. Thus, the decision was made to retain all participants in the reported analyses to maintain the integrity of the randomized assignment.

achievable for you, where 0 = *completely unachievable (not achievable) for you* and 100 = *completely achievable for you*." After recoding the reverse-scored items, final BACS scores were computed as the mean of participants' responses across all 10 items. Higher scores indicate stronger beliefs in the achievability of cultural standards (M = 72.47, SD = 18.79, α = .95).

Results

First, correlational analyses were conducted between XDAR, BFI, and self-esteem scores to replicate prior findings demonstrating how adaptive routines relate to common personality characteristics. In line with Studies 4–5, we found that the XDAR inventory shared a strong positive relationship with self-esteem (r = .51) and conscientiousness (r = .54) and a moderate to strong negative relationship with neuroticism (r = –.47). All correlations, including descriptive statistics, are presented in Table 4.

Table 4

Descriptive Statistics and Correlations for Study 6 Variables

	Variable	*M*	*SD*	1	2	3	4	5	6	7
1.	XDAR	60.45	13.39	-	.51**	.16**	.20**	.54**	–.47**	.04
2.	Self-Esteem	4.50	1.15	.51**	-	.34**	.35**	.42**	–.53**	.03
3.	Extraversion	2.60	1.13	.16**	.34**	-	.20**	.19**	–.37**	.10*
4.	Agreeableness	3.52	1.01	.20**	.35**	.20**	-	.19**	–.27**	.02
5.	Conscientiousness	3.94	.91	.54**	.42**	.19**	.19**	-	–.27**	.17**
6.	Neuroticism	2.80	1.15	–.47**	–.53**	–.37**	–.27**	–.27**	-	–.02
7.	Openness	3.50	.95	.04	.03	.10*	.02	.17**	–.02	-

*p < .05. (2-tailed), **p < .01. (2-tailed)

Finally, we conducted a hierarchical multiple regression analysis to examine the impact of mortality reminders and adaptive routines on beliefs in the achievability of cultural standards. We regressed participants' BACS scores on predictors in a stepwise manner.

Following the guidelines by Aiken & West (1991), we entered the main effects at Step 1: mortality salience manipulation (dummy coded: 1 = mortality reminders, 0 = dental pain control), and adaptive routines, represented by XDAR scores (mean-centered). At Step 2, we entered the interaction between the mortality salience and adaptive routines.

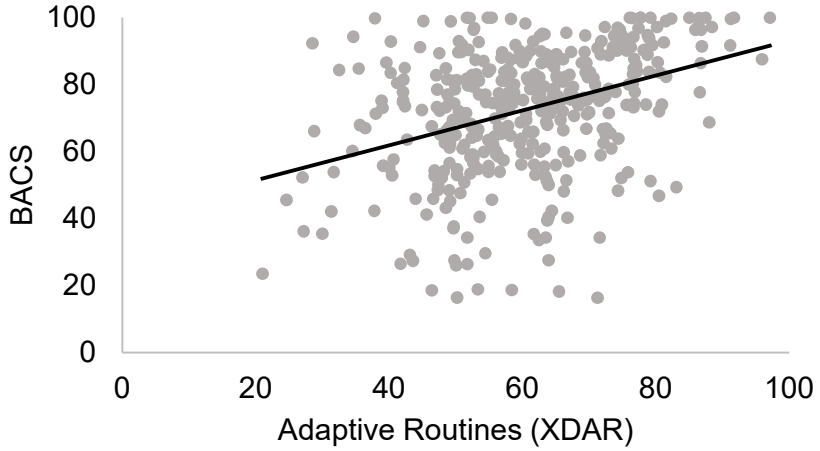
As in Study 5, this analytical approach enabled us to test several predictions. First, we examined whether participants higher in adaptive routines would report stronger beliefs in the achievability of cultural standards (higher BACS; Prediction 6.1) and whether those lower in adaptive routines would report weaker beliefs in the achievability of cultural standards (lower BICS; Prediction 6.2). Secondly, we investigated whether mortality reminders (vs. the dental pain control) would particularly motivate individuals lower in adaptive routines to bolster their beliefs in the achievability of cultural standards (increased BACS; Prediction 6.3).

At Step 1, the model explained a modest proportion of the variance in BICS scores (R^2_{adjusted} =.13), where the main effect of XDAR was significant, B = .52, SE = .07, $t(382)$ = 7.81, $p < .001$. [23] Specifically, as XDAR scores increased, BACS scores also increased. Thus, consistent with Predictions 6.1 and 6.2, participants higher in adaptive routines reported stronger beliefs in the achievability of cultural standards, whereas those lower in adaptive routines reported weaker such beliefs. The main effect of mortality salience was non-significant (p = .778), aligning with our hypothesis that the impact of mortality salience on beliefs in the importance of cultural standards depends on levels of adaptive routines (see Figure 7).

[23] As in Study 5, the unique variance explained by XDAR was calculated using semi-partial correlations (part correlations). Squaring the semi-partial correlation revealed that XDAR uniquely explained 8% of the variance in BACS scores (R^2_{unique} = .14). This effect size suggests that the sample size of N = 385 provided adequate power, as determined by our a priori power analysis.

Figure 7

Relationship Between Adaptive Routines (XDAR) and Beliefs in the Achievability of Cultural Standards (BACS), Illustrated with a Regression Line



At Step 2, upon introducing the interaction between mortality salience and XDAR scores, the proportion of the variance explained by the model remained unchanged (R^2_{adjusted} =.13). The main effect of XDAR continued to be significant (B = .57, SE = .10, $t(381) = 5.67$, $p < .001$), whereas the main effect of mortality salience remained non-significant (p = .779). Furthermore, the hypothesized interaction between mortality salience and XDAR was also non-significant (p = .534), indicating that adaptive routines did not significantly moderate the impact of mortality salience on BACS scores. Thus, contrary to Prediction 6.3, mortality reminders (compared to the dental pain control) did not motivate participants lower in adaptive routines to bolster their beliefs in the achievability of cultural standards.[24]

Discussion

The findings of Study 6 support our RTM-based hypothesis that adaptive routines might reinforce beliefs in the achievability of cultural standards. Results indicate that

[24] In line with the post-hoc analysis of Study 5, we replicated the regression analysis of BACS scores using self-esteem as the moderating variable. At the final step (R^2_{adjusted} = .31), a significant interaction between mortality salience and self-esteem was observed (p = .006), affirming that the lack of the hypothesized interaction between mortality saliences and XDAR is not attributable to methodological deficiencies in the manipulation or dependent variable.

participants with higher levels of adaptive routines reported stronger beliefs in the achievability of cultural standards, whereas those with lower levels reported weaker such beliefs. The belief that cultural standards are achievable is a crucial element of the cultural anxiety buffer, instrumental in mitigating the impact of mortality awareness (see Landau et al., 2015; Swanson & Landau, 2019; Wisman, 2006; Wisman et al., 2015). However, mortality reminders did not significantly motivate participants lower in adaptive routines to bolster their beliefs in the achievability of cultural standards. These results, consistent with the results of in Study 5, underscore the need for further research, particularly to explore alternative defensive strategies among those lower in adaptive routines.

Focusing on the results related to lower levels of adaptive routines, we found that participants lower in adaptive routines exhibited lower self-esteem (Study 4; confirmed in Studies 5 and 6) and reported weaker beliefs in the importance of cultural standards (Study 5). However, mortality reminders did not significantly motivate these individuals to bolster their beliefs in the importance of these standards (Study 5). We theorized that this lack of motivation could stem from a limited belief in the achievability of cultural standards, which might diminish their inclination to prioritize these standards (see Bandura, 1977; Bandura & Locke, 2003). The present study's findings corroborate this line of reasoning, revealing that individuals lower in adaptive routines indeed reported weaker beliefs in the achievability of cultural standards. Yet, following reminders of mortality, these individuals remained unmotivated to bolster such beliefs.

In sum, Studies 5–6 suggest that after being reminded of their mortality, individuals lower in adaptive routines may be hesitant to emphasize the importance or achievability of cultural standards. Considering these findings, individuals lower in adaptive routines may instead lean toward existential coping mechanisms more in line with their perceived capabilities, sources of meaning, and level of psychological security (Landau & Greenberg,

2006; Taubman-Ben-Ari & Findler, 2006; also see Lazarus, 1991). However, from a TMT perspective, the limited success of these individuals in adapting to everyday life might also result in a reduced capacity to cope with the awareness of mortality. Building on these insights and leveraging the existential escape hypothesis (Wisman et al., 2015; see also Wisman, 2006), our subsequent study will explore the hypothesis that individuals with lower adaptive routines might be more inclined toward existential self-escape.

Study 7: Routines and Self-Escape

The results of Studies 4–6 are consistent with the RTM model's proposition that individuals lower in adaptive routines have relative deficits in the psychological mechanisms theorized to buffer the impact of mortality awareness. Specifically, the results showed that relative to participants higher in adaptive routines, those lower in adaptive routines exhibited lower self-esteem (Study 4) and reported weaker beliefs in the importance (Study 5) and achievability (Study 6) of cultural standards. However, while these main effects suggest that individuals lower in adaptive routines should be more vulnerable to the impact of mortality awareness, interaction effects thus far show no variance in responses to mortality reminders between those lower and higher adaptive routines.

This uniformity across responses to reminders of mortality prompts the consideration that individuals lower in adaptive routines might, in some unexpected manner, be as insulated from the impact of mortality awareness as their counterparts higher in adaptive routines. However, this proposition seems counterintuitive given their diminished level of routines aligned with cultural standards, lower self-esteem, and weaker beliefs in the importance and achievability of cultural standards. Thus, rather than indicating a paradoxical resilience in individuals lower in adaptive routines, a more plausible explanation might lie in the profound implications of a lack of adaptive routines. Exposure to mortality reminders might not motivate individuals to reinforce beliefs in cultural standards when their experiences have

repeatedly signaled the futility of such efforts. In line with the concept of learned helplessness (Seligman, 1972; Maier & Seligman, 1976), individuals consistently lower in adaptive routines may have internalized a belief that no matter their efforts, achieving or aligning with these cultural standards is impossible. Thus, these individuals may not be motivated to endorse these seemingly unachievable standards (Duval et al., 1992; Silvia & Duval, 2001; Wicklund, 1975).

When interpreting the findings of Studies 5 and 6, it is crucial to consider that defensive reactions to mortality reminders are multifaceted. Indeed, a broad base of previous research suggests that individuals can vary in their defensive strategies against reminders of mortality (see Landau et al., 2010 for review). Particularly relevant to our findings is the existential escape hypothesis, which we explored in the first chapter (also see Wisman et al., 2006). This hypothesis posits that when faced with reminders of mortality, some individuals may implicitly confront the daunting prospect that cultural standards—benchmarks that offer self-esteem and the promise of transcending mortality—may be unachievable. This realization, while not always consciously acknowledged, can influence behavior and attitudes at an implicit level, thereby impacting an individual's engagement with cultural standards and defensive responses to mortality salience.

Consequently, instead of striving to bolster their beliefs in these cultural standards, individuals doubting the achievability of cultural standards might opt for self-escape: that is, to avoid or reduce their self-awareness. A fundamental assumption of the existential escape hypothesis is that a strong belief that one can achieve cultural standards (as reflected by higher self-esteem) reduces the motivation to self-escape in response to mortality reminders. Research testing the existential escape hypothesis suggests that individuals who perceive cultural standards as unachievable may be more prone to self-escape behaviors when reminded of their mortality (Wisman et al., 2015; also see Wisman, 2006). In contrast,

responses such as worldview defense are employed more frequently among people who believe they are meeting or exceeding cultural standards (i.e., those higher in self-esteem, Juhl & Routledge, 2014; McGregor et al., 2007; Schmeichel et al., 2009).

Building on the results of Studies 4–6 and blending insights from the existential escape hypothesis, in Study 7 we predicted that participants higher in adaptive routines would report a lower motivation to self-escape (Prediction 7.1). Conversely, we predicted that participants lower in adaptive routines would report a higher motivation to self-escape (Prediction 7.2). Further, given their lower self-esteem and weaker beliefs in the achievability of cultural standards, we predicted that mortality reminders (compared to a control topic) would amplify the motivation to self-escape particularly among participants lower in adaptive routines (Prediction 7.3).

Method

Participants

A random sample of 160 US adults[25] (N = 160, 62% female, age 19–84, M_{age} = 45, SD = 15) were compensated $1.50 for their participation. Participants were recruited from Amazon Mechanical Turk again using the CloudResearch Approved List and the same enhanced data quality controls used in Studies 4–6. No data were excluded from the study.

Design

We conducted a hierarchical multiple regression analysis to examine the impact of mortality reminders and adaptive routines on situational self-escape motivation. Our regression model included a mortality salience manipulation (between subjects: mortality reminders vs. physical pain reminders), XDAR scores (continuous: mean-centered), and the interaction between these variables. Participants were randomly assigned to receive either

[25] Consistent with the power, effect size, and alpha level criteria used in Studies 4–6, the minimum sample size needed for a multiple linear regression with three predictors is N = 82. Our study exceeded these requirements with a sample size of N = 160, ensuring adequate statistical power for effect sizes of $R^2 \geq .07$.

reminders of mortality or reminders of general physical pain. The dependent variable, self-escape motivation, was measured using the Situational Self-Escape Motivation Scale (SSEM), adapted from Stenseng et al. (2012).

Procedure

In line with Studies 5 and 6, participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965; $M = 4.59$, $SD = 1.01$, $\alpha = .93$), the BFI-10 (Rammstedt & John, 2007; see Table 5 for descriptive statistics), and the XDAR ($M = 61.37$, $SD = 13.25$, $\alpha = .89$). Next, participants were randomly assigned to receive reminders of mortality or reminders of general physical pain (Hays & Schimel, 2018). After the mortality salience manipulation, participants filled out the PANAS (Watson et al., 1988), assessing positive affect ($M = 2.95$, $SD = .99$, $\alpha = .94$) and negative affect ($M = 1.48$, $SD = .66$, $\alpha = .92$). Following the PANAS, participants completed the same distraction task from Studies 5 and 6.

Finally, participants completed our SSEM scale measuring self-escape motivation (adapted from Stenseng et al., 2012). For the present research, we modified the scale by omitting activity engagement as a contextual factor and replacing the existing introductory phrases with references to a situational context. For example, we changed one item from "When I engage in my activity, I want to escape from myself" to "Right now, I want to escape from myself." Similarly, "When I engage in my activity, I shut out the difficult things I don't want to think about" was changed to "I am currently shutting out the difficult things I don't want to think about." All six original items were adapted this way for inclusion in our scale. Participants indicated the extent of their agreement with each statement on a scale of 0–100, where 0 = *completely disagree* and 100 = *completely agree*. Final scores were computed

as the mean of participants' responses across the items. Higher scores indicate a heightened motivation to self-escape (M = 33.90, SD = 26.36, α = .93).[26]

Results

First, correlational analyses were conducted between XDAR, BFI, and self-esteem scores to replicate prior findings demonstrating how adaptive routines relate to common personality characteristics. In line with Studies 4–6, we found that the XDAR inventory shared a strong positive relationship with self-esteem (r = .55) and conscientiousness (r = .73) and a moderate to strong negative relationship with neuroticism (r = –.38). All correlations, including descriptive statistics, are presented in Table 5.

Table 5

Descriptive Statistics and Correlations for Study 7 Variables

	Variable	*M*	*SD*	1	2	3	4	5	6	7
1.	XDAR	61.37	13.25	-	.55**	.17*	.26**	.73**	–.38**	.11
2.	Self-Esteem	4.59	1.01	.55**	-	.18*	.17*	.56**	–.19*	.12
3.	Extraversion	2.56	1.11	.17*	.18*	-	.29**	.16*	–.34**	.07
4.	Agreeableness	3.47	1.02	.26**	.17*	.29**	-	.25**	–.33**	.01
5.	Conscientiousness	3.92	.94	.73**	.56**	.16*	.25**	-	–.38**	.07
6.	Neuroticism	2.79	1.24	–.38**	–.19*	–.34**	–.33**	–.38**	-	–.16*
7.	Openness	3.48	.99	.11	.12	.07	.01	.07	–.16*	-

*p < .05. (2-tailed), **p < .01. (2-tailed)

Finally, we conducted a hierarchical multiple regression analysis to examine the impact of mortality reminders and adaptive routines on situational self-escape motivation. We regressed participants' BACS scores on predictors in a stepwise manner. Following the

[26] The standard deviation of the SSEM scale in this study represents 78% of the SSEM mean. This proportion is notably higher than that found in the study by Stenseng et al. (2012), where the SD was consistently between 51% and 54% of the mean. However, the presence of a mortality salience manipulation in our study, specifically designed to influence self-escape motivation, likely contributed to this increased variability.

guidelines by Aiken & West (1991), we entered the main effects at Step 1: mortality salience manipulation (dummy coded: 1 = mortality reminders, 0 = physical pain control) and adaptive routines, represented by XDAR scores (mean-centered). At Step 2, we entered the interaction between the mortality salience and adaptive routines.

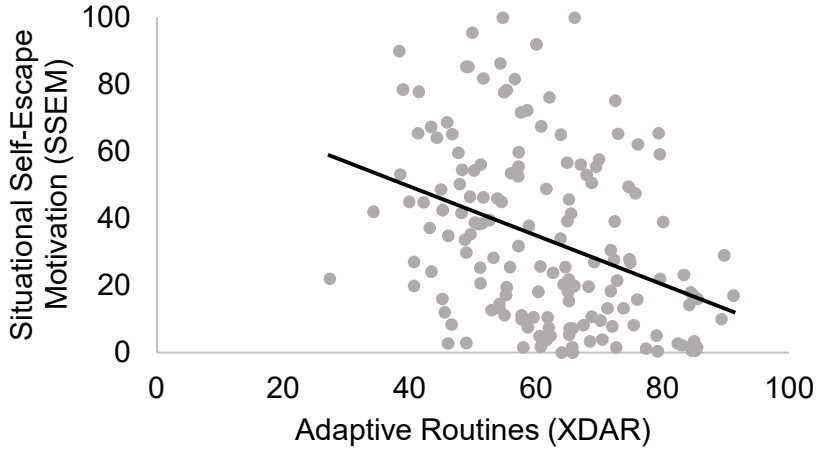
As in Studies 5 and 6, this analytical approach enabled us to test several predictions. First, we examined whether participants higher in adaptive routines would report a lower motivation to self-escape (lower SSEM; Prediction 7.1) and whether those lower in adaptive routines would report a higher motivation to self-escape (higher SSEM; Prediction 7.2). Secondly, we investigated whether mortality reminders (vs. the physical pain control) would amplify the motivation to self-escape, particularly among those lower in adaptive routines (increased SSEM; Prediction 7.3).

At Step 1, the model explained a modest proportion of the variance in BICS scores (R^2_{adjusted} =.15), where the main effect of mortality salience was significant, B = 8.34, SE = 3.84, $t(157) = 2.17$, $p = .032$.[27] Specifically, mortality reminders (vs. physical pain reminders) predicted increased SSEM scores. The main effect of XDAR was also significant, B = –.72, SE = .15, $t(157) = –4.97$, $p < .001$. Specifically, as XDAR scores increased, SSEM scores decreased. Thus, consistent with Predictions 7.1 and 7.2, participants higher in adaptive routines reported lower motivation to self-escape, whereas those lower in adaptive routines reported higher self-escape motivation.

[27] As in Studies 5–6, the unique variance explained by XDAR was calculated using semi-partial correlations (part correlations). Squaring the semi-partial correlation revealed that XDAR uniquely explained 13% of the variance in BACS scores (R^2_{unique} = .13). This effect size suggests that the sample size of N = 160 provided adequate power, as determined by our a priori power analysis.

Figure 8

Relationship Between Adaptive Routines (XDAR) and Situational Self-Escape Motivation (SSEM), Illustrated with a Regression Line



At Step 2, upon introducing the interaction between mortality salience and XDAR scores, the proportion of the variance explained by the model increased (R^2_{adjusted} =.17). The main effect of mortality salience continued to be significant, B = 8.33, SE = 3.81, t(156) = 2.19, p = .030. Furthermore, the main effect of XDAR continued to be significant, B = –.45, SE = .20, t(156) = –2.32, p = .022. Importantly, the hypothesized interaction between mortality salience and XDAR was also significant (B = –.60, SE = .29, t(156) = –2.07, p = .040), indicating that adaptive routines significantly moderated the impact of mortality salience on SSEM scores. Moreover, this moderating effect remained significant when controlling for self-esteem (B = –.57, SE = .28, t(155) = –2.00, p = .047).

To further explore the two-way interaction effect identified in the hierarchical multiple regression, we employed the PROCESS macro (Model 1; Hayes, 2017) to test the highest-order interaction and conduct a simple slopes analysis. These analyses aimed to determine the unique contribution of XDAR as a moderator and to assess the effects of mortality reminders on SSEM at different levels of XDAR (±1 SD from the centered mean).

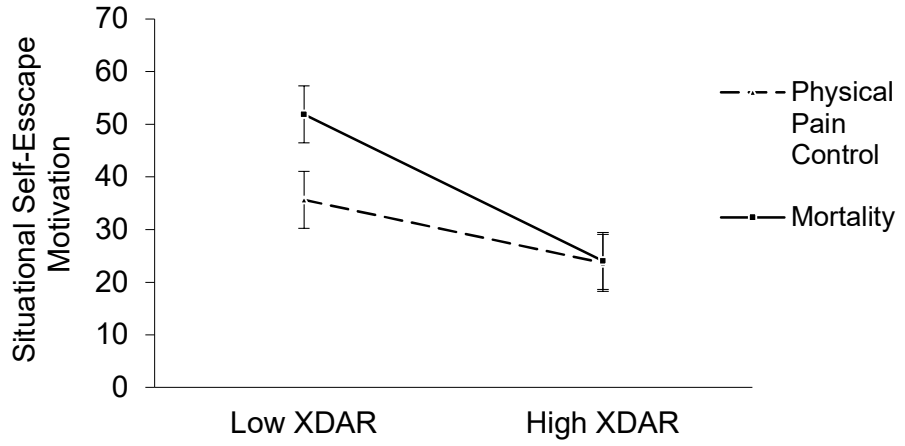
The highest-order interaction test indicated that the inclusion of the interaction explained an additional 2% of the variance in the outcome, $\Delta R^2 = 0.02$, $F(1, 156) = 4.28$, $p = 0.040$.[28] Bootstrapping analyses with 50,000 samples were also conducted for this analysis, confirming the significance of the interaction effects. The bootstrapped regression coefficient for the interaction effect was $B = –.60$**,** with a 95% confidence interval (CI) ranging from –1.07 to –.09, indicating that the effect was statistically significant and consistent across resamples.

To further explore the two-way interaction effect identified in the hierarchical multiple regression, we again used the PROCESS macro (Model 1; Hayes, 2017) to perform a simple slopes analysis. This analysis assessed the effects of mortality reminders on SSEM scores at ±1 SD from the centered mean of XDAR. Results indicated that mortality reminders (compared to the physical pain control) increased SSEM scores at lower levels of XDAR (–1 *SD* from the mean), $B = 16.25$, $SE = 5.40$, $t(156) = 3.01$, $p = .003$. In contrast, at higher levels of XDAR (+ 1 *SD*), mortality reminders (compared to the physical pain control) did not have a significant effect on SSEM scores ($p = .941$). Thus, consistent with our predictions, mortality reminders (compared to physical pain reminders) amplified the motivation to self-escape, particularly among individuals lower in adaptive routines (Prediction 7.3).

[28] This effect size ($R^2 = .02$) is smaller than the threshold identified by our sensitivity analysis ($R^2 = .07$), suggesting that the analysis of the interaction may be underpowered. This limitation will be discussed further in the general discussion at the end of the chapter.

Figure 9

Situational Self-Escape Motivation (SSEM) as a Function of Mortality Salience at ±1 SD of Adaptive Routines (XDAR)



Supplementary Analyses

Next, we repeated the same hierarchical multiple regression analysis, using self-esteem as the moderating variable. This analysis allowed us to examine the impact of mortality reminders and self-esteem on situational self-escape motivation. We regressed participants' SEMS scores on predictors in a stepwise manner. Once again, we entered the main effects at Step 1: mortality salience manipulation (dummy coded: 1 = mortality reminders, 0 = physical pain control) and self-esteem (mean-centered). At Step 2, we entered the interaction between mortality salience and self-esteem.

At Step 1, the model explained a modest proportion of the variance in BICS scores (R^2_{adjusted} =.16), where the main effect of mortality salience was significant, B = 7.87, SE = 3.82, $t(157) = 2.06$, $p = .041$. Specifically, mortality reminders (vs. physical pain reminders) predicted increased SSEM scores. The main effect of self-esteem was also significant, B = –9.93, SE = 1.90, $t(157) = –5.23$, $p < .001$. Specifically, as self-esteem increased, SSEM scores decreased.

At Step 2, upon introducing the interaction between mortality salience and self-esteem, the proportion of the variance explained by the model remained unchanged (R^2_{adjusted} =.16). The main effect of mortality salience continued to be significant, $B = 7.90$, $SE = 3.82$, $t(156) = 2.07$, $p = .040$. Furthermore, the main effect of self-esteem continued to be significant, $B = –7.48$, $SE = 2.90$, $t(156) = –2.58$, $p = .011$. However, the interaction between mortality salience and self-esteem was non-significant ($p = .267$), indicating that self-esteem did not significantly moderate the impact of mortality salience on SSEM scores. Thus, the effect of mortality salience on SSEM scores was uniquely moderated by individual differences in adaptive routines.

Moreover, when controlling for the effects of XDAR, the main effect of self-esteem on SSEM scores became non-significant in the final step of our regression model ($B = –3.34$, $SE = 3.22$, $t(155) = –1.04$, $p = .301$). This result suggests that the previously observed significant negative relationship between self-esteem and situational self-escape motivation is largely attributable to individual differences in adaptive routines.

Discussion

Drawing on the existential escape hypothesis and the RTM model, the findings of Study 7 revealed that individuals higher in adaptive routines reported a lower motivation to self-escape (Prediction 7.1). In contrast, those lower in adaptive routines reported a higher motivation to self-escape (Prediction 7.2). These results are consistent with TMT's perspective that aligning with cultural standards promotes adaptive psychological adjustment (for review, see Yetzer & Pyszczynski, 2019). In contrast, a lack of adaptive routines may indicate psychological maladjustment (for a broad review of maladaptive behaviors linked to self-escape, see Baumeister, 1991). In sum, the divergent motivations for self-escape observed between individuals higher and lower in adaptive routines underscore the impact of

adaptive routines in psychological adjustment, highlighting their role in mitigating the tendency toward self-escape in everyday life.

Most importantly, our findings also revealed that mortality reminders significantly amplified the motivation to self-escape particularly among participants lower in adaptive routines (Prediction 7.3). These findings are consistent with the RTM model's proposition that adaptive routines might strengthen the cultural anxiety buffer, as our findings suggest that individuals higher in adaptive routines are likely more insulated from the impact of mortality awareness. Individuals higher in adaptive routines reported lower self-escape motivation, a trend that persisted even when exposed to mortality reminders. In contrast, individuals lower in adaptive routines appear to have a reduced capacity for buffering against the impact of mortality awareness, as evidenced by their increased motivation to self-escape in response to mortality reminders.

General Discussion

The present studies explored the relationships between adaptive everyday routines and critical components of the cultural anxiety buffer: self-esteem and beliefs in the importance and achievability of cultural standards. Grounded in the RTM model, we hypothesized that higher levels of adaptive routines would be associated with elevated self-esteem and more robust beliefs in the importance and achievability of cultural standards. In contrast, lower levels of adaptive routines were anticipated to correlate with deficits in these areas, potentially fostering a greater propensity for existential self-escape. Before examining this relationship, however, developing a tool to measure adaptive routines in a broader context was essential.

The introduction of the XDAR inventory in Study 4 marked a significant methodological advancement. The XDAR provided a reliable self-report measure for assessing individual differences in adaptive everyday routines, particularly those aligned with

an individual's everyday responsibilities across various domains of life. Utilizing the XDAR, Studies 4–7 consistently demonstrated a moderate to strong positive relationship between adaptive routines and self-esteem. Extending the findings of Study 4, Studies 5 and 6 confirmed that individuals higher in adaptive routines (reflected in higher XDAR scores) reported stronger beliefs in the importance and achievability of cultural standards, in stark contrast to those lower in adaptive routines (lower XDAR scores).

These initial findings regarding the XDAR's main effects underscore adaptive routines' potential role in fortifying the cultural anxiety buffer, suggesting a pivotal mechanism for individual resilience. Prior research on TMT suggests that beliefs in both the importance (Greenberg et al., 1986; also see Crocker & Wolfe, 2001) and achievability (Wisman et al., 2015; cf. Becker, 1971) of cultural standards are critical for the buffer's effectiveness in mitigating the impact of mortality awareness. Consequently, our findings also point to significant deficits that could make individuals lower in adaptive routines more vulnerable to mortality awareness. These insights led us to the following inquiry: how might these individuals respond to reminders of their mortality?

One potential response of individuals with lower adaptive routines to reminders of mortality could be to shore up their cultural anxiety buffer. Mortality reminders have been shown to amplify the motivation to embrace culturally valued standards, particularly among those more susceptible to mortality awareness, such as individuals with lower self-esteem (Harmon-Jones et al., 1997; Kashima et al., 2004). In line with this, Studies 5 and 6 examined whether exposure to mortality reminders, compared to a control topic, would encourage individuals lower in adaptive routines to bolster their beliefs in the importance (Study 5) and achievability (Study 6) of cultural standards. However, the results indicated that mortality reminders did not prompt individuals lower in adaptive routines to bolster these beliefs, confirming the necessity for further exploration.

In Study 7, we explored an alternative defense that individuals lower in adaptive routines might exhibit in response to mortality reminders. Guided by the existential escape hypothesis, we hypothesized that individuals lower in adaptive routines, who lack a sense of achievability regarding cultural standards and consequently have diminished motivation to underscore their importance, might be inclined toward self-escape when confronted with mortality reminders (cf. Wisman, 2006; Wisman et al., 2015). Supporting our hypothesis, Study 7 revealed that individuals lower in adaptive routines exhibited a heightened motivation for self-escape, a response amplified by mortality reminders. This finding partially explains the lack of engagement with cultural standards observed in Studies 5–6. This pattern suggests that for those lower in adaptive routines, deeper engagement with cultural standards, rather than serving as a source of existential assurance, might represent an intensified confrontation with personal inadequacies, ultimately driving their retreat into self-escape to mitigate the impact of mortality awareness.

While the results from Studies 4–7 offer insights into how adaptive routines might strengthen the cultural anxiety buffer and how an absence of adaptive routines can influence responses to mortality reminders, our findings also provide crucial insights with the potential to inform and refine the RTM model. These insights contribute to a deeper understanding of terror management strategies and highlight the complex relationship between everyday behaviors and responses to reminders of mortality. Next, we will address the limitations of our current studies and leverage the insights obtained to suggest directions for future research.

Limitations

Considering inherent limitations, conclusions regarding the relationship between adaptive routines and self-esteem (Study 3) and beliefs in the importance and achievability of cultural standards (Studies 4–5) should be approached with caution and further corroborated

by subsequent research. These findings are correlational. Although correlational methods offer valuable insights, they fall short of establishing causality. Consequently, from the current studies, it is impossible to conclusively determine whether adaptive routines foster higher self-esteem and stronger beliefs in the importance and achievability of cultural standards or if these relationships are the result of extraneous variables.

The challenge of interpreting our correlational findings also extends to deciphering the directional link between adaptive routines, self-esteem, and beliefs in the importance and achievability of cultural standards. The extant literature suggests a reciprocal relationship where behaviors inform self-perceptions, and self-perceptions, in turn, influence behaviors (Shavelson et al., 1976). Cultural standards may promote adaptive behaviors (Bond & Smith, 1996; Heine & Ruby, 2010), just as individuals' actions are often guided by their values and the perceived importance of relevant standards (Deci & Ryan, 2000, 2008). Moreover, acting consistently in alignment with a standard of value might enhance its perceived importance (Harmon-Jones, 2019; cf. Festinger,1957) and perceived achievability (Bandura, 1977, 2001). This potential for bidirectionality underscores the importance of developing interventions that bolster adaptive routines and subsequently assess beliefs in the importance and achievability of cultural standards.

It is also crucial to recognize the lack of responses to mortality reminders among individuals lower in adaptive routines observed in Studies 5 and 6, particularly as this gap is only partly addressed by the findings in Study 7. Importantly, these findings should not be interpreted to mean that individuals with lower levels of adaptive routines are inherently unable to reinforce their beliefs in the importance and achievability of cultural standards when given proper support. Consequently, further exploration of targeted interventions designed for individuals lower in adaptive routines is crucial for accurately interpreting the results of the present studies.

The present work highlights an opportunity for targeted interventions to uncover the causal dynamics driving the relationship between adaptive routines and existential self-escape. Our theorizing suggests that the perception of cultural standards as unachievable, particularly among those with lower levels of adaptive routines, leads to existential self-escape. However, in the present studies, we did not evaluate achievability beliefs alongside tendencies toward existential self-escape, nor did we manipulate these beliefs directly.

If our theoretical framework proves accurate, targeted interventions designed to boost self-efficacy—and thereby elevate perceptions of cultural standard achievability—might reduce the tendency towards existential self-escape among individuals low in adaptive routines. Applying empirically validated strategies to enhance self-efficacy, such as mastery experiences, vicarious experiences, and verbal persuasion (Bandura, 1997; Hagen et al., 1998; Schunk & Hanson, 1989), could corroborate the role of achievability beliefs in driving motivations for existential self-escape. Until we conduct such empirical studies, our grasp of how lower levels of adaptive routines contribute to a higher likelihood of existential self-escape remains markedly limited.

Statistical Power

In Studies 4–7, the main effects were adequately powered as confirmed by sensitivity analyses using G*Power (Faul et al., 2007). However, in Study 7, the observed effect size for the interaction between mortality salience and XDAR on SSEM was smaller than expected. The 50,000 bootstrap samples provide an estimate of the stability of the observed interaction effect, demonstrating that the findings are reliable within the existing dataset and unlikely to be driven by random variation (Efron & Tibshirani, 1993; Hayes, 2018). However, a G*Power sensitivity analysis (Faul et al., 2007) revealed that the study was only sufficiently powered to detect effect sizes of $R^2 > .07$, while the observed effect size was $R^2 = .02$. This suggests that the sample size, constrained by time and budget, may not have been large

enough to detect more subtle interaction effects, even though the observed effects appear stable. Future studies should therefore prioritize larger samples to ensure adequate power.

Implications for TMT and Beyond

While further research with larger samples is needed to explore how mortality reminders interact with adaptive routines to affect self-esteem, beliefs about cultural standards, and existential escape, these findings lay a strong foundation for understanding the broader role of these factors in buffering existential anxiety within the TMT framework. Our findings suggest a positive relationship between adaptive routines and critical components of the cultural anxiety buffer, specifically self-esteem and beliefs in the importance and achievability of cultural standards. In contrast, individuals lower in adaptive routines exhibit deficits in these critical components, aligning with Wisman's (2006; Wisman et al., 2015) theorized conditions for existential self-escape. Within this context, our findings also reveal that individuals lower in adaptive routines are more inclined toward existential self-escape.

In the broader context of routine, self-escape, and TMT literature, our pivotal discovery—that individuals lower in adaptive routines (lower XDAR) demonstrate a propensity for existential self-escape—suggests that mortality awareness might hinder the development of adaptive routines among these individuals. Behaviors commonly linked to self-escape, such as drug use, alcohol and tobacco abuse, excessive consumption, self-handicapping, and excessive risk-taking, are generally maladaptive (for an extensive review, see Baumeister, 1991). These behaviors can foster a sense of futility and negative self-perceptions (Baumeister, 1991; see also Shavelson et al., 1976), which may increase susceptibility to mortality awareness and further fuel the tendency toward self-escape (Wisman, 2006; Wisman et al., 2015).

The pernicious cycle just discussed suggests a negative feedback loop where mortality awareness precipitates escape behaviors, which, through repetition, can evolve into

maladaptive routines, thus diminishing the potential for positive behavioral change (Ouellette & Wood, 1998; Wood et al., 2002). Hence, the universal human awareness of mortality may exacerbate deficiencies in adaptive routines, underlining a critical need for further inquiry and the development of targeted intervention strategies.

Future Directions

One avenue for future RTM research identified in this work involves exploring strategies to strengthen adaptive routines and reduce existential self-escape tendencies. Occupational therapy presents a promising intervention framework, emphasizing the acquisition of adaptive "habits, routines, roles, and rituals" (American Occupational Therapy Association, 2020, p. 12). Investigating how occupational therapy can bolster adaptive routines offers a valuable extension to the RTM model and practical applications for enhancing existential well-being—encompassing agency, identity, and self-continuity—among various populations and settings (Gallimore & Lopez, 2002; Ludwig, 1997; Pyatak et al., 2022; cf. Wong & Wong, 2012).

Additionally, it is crucial to bridge the gap between self-reported motivations for existential self-escape and actual self-escape behaviors. Prior TMT research has employed diverse methodologies to capture these behaviors (Arndt et al., 1998; Silvia, 2001; Wisman et al., 2015). Future studies should aim to replicate and extend these findings among individuals lower in adaptive routines, employing behavioral measures such as time spent on self-reflective tasks, self-referential language use, and consumption behaviors as proxies for existential self-escape.

The relationship between adaptive routines and self-esteem also warrants further investigation. For example, in the supplemental analysis of Study 7, we discovered a main effect of self-esteem, similar to the main effect of adaptive routines, wherein higher self-esteem scores predicted lower motivation to self-escape ($p = .011$). This result suggests that

individuals higher in self-esteem have lower motivation to avoid or reduce self-awareness. This notion aligns with prior research suggesting that self-esteem can act as a buffer against psychological stressors (e.g., Brown, 2010; Taylor et al., 2003), thus reducing the motivation to engage in self-escape.

However, when controlling for the effects of adaptive routines, the significance of the negative relationship between self-esteem and self-escape motivation diminished (p = .301). This result implies that adaptive routines may play a crucial role in reducing the motivation to self-escape, independent of self-esteem levels. In effect, while high levels of self-esteem are associated with lower self-escape motivation, adaptive routines appear to significantly override this effect.

From one angle, adaptive routines may reinforce the belief that cultural standards are achievable, diminishing the motivation to self-escape. From another angle, adaptive routines may somehow fortify self-esteem at lower levels. For example, it has been found that the capacity to manage one's life and immediate environment effectively is positively related to self-esteem stability (Zeigler-Hill & Wallace, 2012; see also Kernis, 2005; Ryff and Keyes, 1995). Further, it has been argued that self-esteem stability can decrease defensive responses to mortality reminders (see Schmeichel et al., 2009). In sum, the relationship between adaptive routines and self-esteem stability presents a rich area for future investigation.

A practical method for assessing self-esteem stability might involve comparing participants' self-esteem scores longitudinally, from an initial screening to subsequent measures taken during the study (Kernis, 1993). Employing this approach in an experimental framework could shed light on the interaction of adaptive routines and self-esteem stability, offering insights into their collective impact on existential self-escape tendencies. This approach could further clarify the mechanisms through which adaptive routines may buffer individuals against the impact of mortality awareness.

As we deepen our understanding of the relationships between adaptive routines, the cultural anxiety buffer, and existential self-escape, we must also explore the psychological structures that individuals higher in adaptive routines might defend in response to mortality reminders. If adaptive routines bolster both self-esteem and self-esteem stability as just discussed, individuals higher in adaptive routines may be uniquely non-defensive in response to mortality reminders (see Schmeichel et al., 2009). However, given that their everyday routines are relatively more aligned with cultural standards, it is also plausible that these individuals are relatively more invested in the general belief that such alignments matter. Thus, further research examining whether individuals higher in adaptive routines are motivated to defend structures upholding standards of cultural value is warranted.

For instance, the concept of meritocracy—the notion that success is earned by consistently doing the "right" things and developing valuable skills (McCoy & Major, 2007)—may be a principle they are particularly committed to, as it justifies the value of a disciplined lifestyle and the expectation of commensurate rewards. Similarly, the principles of consistency and predictability may be paramount for those higher in adaptive routines, reinforcing the legitimacy of their daily behaviors (see Landau et al., 2004). Moreover, in a culture preoccupied with instant rewards (Gilbert et al., 2002; Kassam et al., 2008), individuals who maintain higher levels of adaptive routines may find value and solace in the stability of traditional practices and long-term commitment. Individuals higher in adaptive routines may perceive such enduring practices not as relics but as reliable touchstones that provide continuity amidst the ebb and flow of societal shifts (Greenberg et al., 1992; Ludwig, 1997). Should these core beliefs be challenged in the wake of mortality reminders, a defensive reaction may be provoked in those higher in adaptive routines, as these beliefs underpin the structures supporting their self-esteem and mitigating their mortality concerns.

Concluding Remarks

Insights from the studies of Chapter 5 have shed light on the ways that adaptive routines might strengthen the cultural anxiety buffer, from bolstering self-esteem to reinforcing beliefs in the importance and achievability of cultural standards. Ultimately, our findings demonstrate how a lack of adaptive routines can lead to an increased propensity for existential self-escape. The insights from these studies have deepened our understanding of the RTM model and highlighted potential areas for expansion and refinement. Chapter 6 will synthesize these insights, setting the stage for further advancements in understanding the complex responses to mortality reminders within the RTM model.

VI. Dissections

According to TMT, the fear of mortality, if left unmitigated, would paralyze effective thought and action, making day-to-day functioning nearly impossible (Routledge et al., 2010; Yetzer & Pyszczynski, 2019). This raises a critical question: How do individuals navigate their daily lives amidst the potential for such potent existential anxiety? An extensive body of research demonstrates that individuals buffer the impact of mortality awareness by actively engaging in several key mechanisms. Firstly, they put their faith in a collective understanding of reality perceived as structured, dependable, and predictable. Secondly, they invest in culturally agreed-upon standards and strive to live according to them. By successfully aligning with cultural standards, individuals can bolster their self-esteem, signaling that they are valued and, thus, safe from the existential threat of mortality.

Leveraging a broad base of TMT literature and blending insights from research related to routines, we proposed that everyday routines serve a two-dimensional role in terror management. Firstly, an individual's everyday routines can create a "bubble" of psychological security that buffers against mortality concerns (i.e., the structural dimension). Secondly, an individual's adaptive everyday routines reflect their cultural alignment, support their self-esteem, and buffer against mortality concerns (i.e., the cultural dimension). Delineating these ideas, we introduced the routine terror management (RTM) model as a framework to synthesize otherwise disparate findings and stimulate further research. In this pursuit, we demonstrated that hypotheses derived from the model receive direct or indirect support from various research streams. Furthermore, these hypotheses can be used to generate unique predictions that align with empirical data from a set of seven studies.

The Structural Role

An initial series of studies (Studies 1-3), informed by the Routine Terror Management (RTM) model, focused on the structural dimension of everyday routines. These studies

underscore the role of structure in providing confidence and predictability in daily life (see Ch. II of this thesis). The findings suggest that, for individuals lower in self-esteem, everyday routines—from morning rituals to household chores—serve to create a "bubble" of psychological security. This "bubble" effectively shields against the impact of mortality awareness. Specifically, Study 1 found that participants lower in self-esteem were more inclined toward their routines following mortality reminders, in contrast to those higher in self-esteem. Study 2 further underscored the moderating role of self-esteem in the existential function of routines, revealing that reflecting on one's routines after mortality reminders decreased death-related thoughts particularly among participants lower in self-esteem. Similarly, Study 3 revealed that mortality reminders significantly diminished participants' openness to changing their routines, particularly among participants lower in self-esteem.

Contributions

The collective findings from Studies 1–3, focusing on individuals lower in self-esteem, make significant contributions to the TMT literature, particularly regarding the motivation for structured, predictable interpretations of the self and everyday experience (for an in-depth review, see Swanson & Landau, 2019). These present studies expand TMT's scope beyond its classic emphasis on how the structured representation of information and experiences supports the management of mortality awareness. Extending this scope, the present studies highlight the significant role that structured behavioral patterns, namely everyday routines, play in managing the awareness of mortality. This expansion underscores the importance of everyday routines not just for their practical utility, but as vital psychological strategies for managing existential fears. Furthermore, as everyday routines embed life experiences within predictable structures, they also promote feelings of safety and confidence (Avni-Babad, 2011). Thus, our findings also extend prior studies suggesting that

reminders of mortality can motivate individuals lower in self-esteem to seek psychological security and avoid uncertainty (Landau & Greenberg, 2006; Routledge et al., 2010).

Moreover, the collective findings from Studies 1–3 focusing on individuals higher in self-esteem contribute to a breadth of studies supporting TMT's anxiety buffer hypothesis (for a review, see Schimel et al., 2019). Specifically, our findings support the notion that individuals higher in self-esteem show greater resilience when faced with reminders of mortality. Following reminders of mortality, this resilience was demonstrated by a diminished inclination toward familiar routines, no increase in death-related cognition, and no less willingness to change their established routines. In sum, the findings of Studies 1–3 highlight the differing coping mechanisms employed by individuals with varying levels of self-esteem in response to mortality reminders and how these varying levels of self-esteem shape attitudes toward everyday routines. Together, these distinctive findings provide insights for future research and the development of psychological interventions tailored to individual needs and coping styles.

Refinements

As we delve deeper into the implications of our findings, it becomes apparent that refining the RTM model is crucial, particularly in its framework for examining the role of everyday routines as protective structures in terror management. Two critical gaps, essential for this refinement, arise from Studies 1–3. First, we need a more detailed exploration of the structural dimension of routine terror management, specifically identifying which routines—adaptive or nonadaptive—can serve this purpose. Identifying whether individuals gravitate toward adaptive or maladaptive routines following mortality reminders would reveal critical implications for their psychological well-being and the effectiveness of their terror management strategies. Understanding this dynamic is crucial for developing interventions aimed at promoting resilience and adaptive coping mechanisms in the face of existential

threats. Second, it is imperative to understand the behavioral responses of individuals higher in self-esteem, particularly why they might be less inclined toward their established routines when confronted with mortality reminders. Such an investigation may provide additional insight into the conditions under which higher self-esteem leads to adaptive versus maladaptive coping mechanisms (e.g., Greenberg et al., 1990; Rothschild et al., 2009).

Exploring which routines can serve in the structural dimension of routine terror management and understanding why individuals higher in self-esteem might not rely on these routines are crucial steps. This exploration will unveil the varied strategies people employ to manage the fear of death and highlight how self-esteem levels influence these strategies. Such insights have the potential to enrich the RTM model and inform practical interventions aimed at improving psychological resilience. In the forthcoming sections, we will delve deeper into these topics, seeking to refine our understanding of the RTM model and its implications for managing existential anxiety.

Will any routine do?

Future research should measure the adaptiveness of routines that individuals with lower self-esteem cling to—and resist changing—after mortality reminders. Are the routines employed in the structural role of routine terror management adaptive, aligning with broader cultural standards, or could they be nonadaptive, potentially offering different implications for terror management?

Adaptive routines, by definition, are aligned with cultural standards and personal responsibilities (Gallimore & Lopez, 2002; VandenBos, 2007), providing a consistent and stable framework within which individuals can operate (Dunn, 2000). The inherent predictability and consistency of adaptive routines foster a sense of safety and confidence while reinforcing an individual's sense of belonging and identity within their cultural context (Avni-Babad, 2011; Ludwig, 1997). In doing so, engaging with adaptive routines might help

mitigate existential anxiety associated with the awareness of mortality. By embedding one's everyday experiences within a framework of familiar and culturally resonant practices, adaptive routines may provide an added buffer against mortality concerns.

Despite not aligning with cultural standards or one's responsibilities, engaging in non-adaptive routines might still have a role in mitigating mortality concerns, albeit differently than adaptive routines. In effect, these routines may become intertwined with narratives that individuals create to explain their inability to meet various life responsibilities (Mehlman & Snyder, 1985; Snyder & Higgins, 1988). For instance, a non-adaptive morning routine involving procrastination and poor time management might be rationalized as being caused by external factors such as heavy city traffic or uncooperative children (see Rotter, 1966). This narrative may then serve as a psychological defense, allowing individuals to attribute their shortcomings to circumstances beyond their control rather than personal failings (Zuckerman, 1979).

In the context of the RTM model, engaging in nonadaptive routines—those not necessarily conducive to personal goals or aligned with broader cultural standards—may still offer psychological security. This sense of psychological security can stem from how routine actions exempt individuals from blame for negative outcomes, as described by Kahneman and Miller (1986). Similarly, nonadaptive routines could create a buffer against the existential discomfort associated with taking responsibility for personal failings (see Sartre, 1943/2021; Yalom, 1980). Conversely, challenging or changing these nonadaptive routines might threaten the self-protective narratives that individuals construct to maintain a sense of coherence and purpose, as discussed by McAdams (2006; McAdams & McLean, 2013). Indeed, prior research has shown that mortality reminders can increase the attribution of blame to external factors ostensibly outside personal control (Mikulincer & Florian, 2002). Therefore, non-adaptive routines might offer a temporary buffer against mortality concerns

by reinforcing self-protective narratives, albeit undermining the greater-contextual buffers offered by adaptive routines (see Chapter V of this thesis).

By investigating the qualities and impacts of the routines that participants describe during experimental routine salience inductions, future research on the RTM model could reveal critical nuances in how individuals with varying self-esteem levels cope with mortality awareness. Such exploration could also address whether these routines, while offering immediate psychological security, contribute to long-term resilience or inadvertently reinforce existential vulnerabilities.

Why reach beyond routines?

The finding that individuals higher in self-esteem were less inclined toward their everyday routines following mortality reminders highlights the need to explore their motivations and alternative responses further. This tendency might be partly due to the impact of their higher levels of adaptive routines, as discussed in Chapter V, which support self-esteem and provide a culturally reinforced sense of psychological security in the face of mortality awareness. As Chapter III of the RTM model suggests, this shift away from routine might indicate a turn towards novelty and personal growth. This notion is supported by numerous psychological perspectives that propose adaptive routines as a foundation for pursuing higher-level goals (e.g., De Ridder & Gillebaart, 2017; Dunn, 2000; James, 1890) and that mortality reminders may prompt individuals with more secure existential defenses to strive toward greater meaning (for review see Rogers et al., 2019).

On the other hand, other existential motivations might lead to less adaptive responses to mortality reminders. For instance, if routines become excessively repetitive and mundane, they might lead to boredom (Barbalet, 1999; Van den Bergh & Vrana, 1998), fostering a sense of meaninglessness and eroding the psychological buffer against mortality concerns (Moynihan et al., 2021). This boredom could drive individuals to seek activities that

reestablish a sense of meaning, albeit not necessarily in adaptive ways. For example, when confronted with meaning-threats, individuals may resort to risky or hedonic behaviors that conflict with their beliefs or health (Ferraro et al., 2005; Goldenberg et al., 2005; Taubman Ben-Ari & Findler, 2005).

In sum, examining the level of adaptiveness characteristic of routines described by participants during experimental routine salience inductions is essential for advancing the RTM model. Furthermore, examining how self-esteem influences responses to mortality reminders—precisely, the appeal of and willingness to change established routines—will provide crucial insights for the model's continued development. Insights from these explorations can deepen our understanding of the role of routines in existential coping strategies and reveal how self-esteem affects these processes. These findings can also guide the development of tailored psychological interventions and support mechanisms. With these proposed improvements to the model's structural aspect, we now discuss the cultural dimension.

The Cultural Role

As previously discussed, routines make up a substantial proportion of everyday behavior. Indeed, real-time experience sampling studies demonstrate that 45% of human activities are enacted almost daily and usually in the exact location (Quinn & Wood, 2005; Wood et al., 2002). Thus, it is plausible to suggest that everyday routines provide essential structure for nearly half of everyday behavior. However, human experience is not entirely rooted in routine. In a dynamic world, individuals must navigate challenges outside their familiar routines. Acts of chance, like inclement weather, unforeseen illness, car trouble, lane closures, new project opportunities, interactions with others, and a child's seemingly spontaneous school holiday schedule, are potent disruptors to the comfortable routines that structure our daily lives. These aspects of everyday life can snap us out of our habitual

patterns and thrust us into less familiar contexts, challenging the sense that life is predictable and controllable.

How do people mitigate existential anxieties in these situations? Specifically, TMT proposes that people do so by investing in a cultural worldview, internalizing its standards, and building their lives around achieving those standards. By aligning with cultural standards, people develop self-esteem, which imparts a sense of safety and the promise that some part of themselves, such as their soul, children, values, or legacy, will endure beyond death (see Pyszczynski et al., 2004). The RTM model extends this argument, positing that adaptive everyday routines are palpable indicators of alignment with cultural standards, reinforcing the psychological constructs necessary for managing concerns over personal mortality.

The RTM model, extending TMT, posits that adaptive routines reflect an alignment with cultural standards, support self-esteem, and buffer against mortality concerns. A second series of studies, guided by the RTM model, focused on this cultural dimension of everyday routines in terror management. These studies suggest that adaptive routines reflect an individual's cultural alignment, revealing that higher levels of adaptive routines (in contrast to lower levels) are associated with stronger beliefs in the importance and achievability of cultural standards and higher self-esteem (Studies 4–6).

Delving into the critical function of adaptive routines as a buffer against mortality concerns, Studies 5–6 also explored the relationship between adaptive routines and responses to mortality reminders. Notably, individuals with higher levels of adaptive routines, who already hold strong beliefs in the importance and achievability of cultural standards, did not show increased belief affirmation following mortality reminders, aligning with the RTM model's view of these routines as buffers against mortality concerns. However, individuals with lower levels of adaptive routines, whose beliefs in cultural standards are weaker and thus require affirmation to sustain faith in the cultural worldview and support self-esteem,

also surprisingly did not exhibit increased belief affirmation in response to mortality reminders. Upon confirming the viability of our mortality salience manipulation and dependent variable, we integrated insights from the existential escape hypothesis to explain these findings. Expanding these insights, Study 7 revealed a pivotal distinction: individuals lower in adaptive routines reported a heightened motivation to self-escape that was amplified by mortality reminders. In contrast, those higher in adaptive routines reported a diminished motivation to self-escape, which was unaffected by reminders of mortality.

Contributions

The XDAR scale represents a noteworthy step forward in assessing adaptive routines among adults, uniquely addressing a wide range of fundamental personal responsibilities that extend from personal care to broader domestic and professional contexts. Distinct from previous scales, which have often focused on specific demographics or conditions, the XDAR offers a comprehensive tool specifically tailored to the adult population. This approach emphasizes the distinct challenges and adaptive needs unique to adults, which can significantly differ from those encountered in other life stages or under specific conditions. Utilizing the XDAR, the present studies were, to the best of our knowledge, the first to measure adaptive routines in adults across various domains of basic personal responsibilities in everyday life. Additionally, these studies were the first to test the effects of adaptive routines in experimental research, both within and beyond the context of TMT.

The collective findings from Studies 4–6, focusing on individuals higher in adaptive routines, make significant contributions to the TMT literature, particularly in understanding the motivation to align with cultural standards and support self-esteem as a safeguard against mortality concerns (e.g., Greenberg et al., 1992; for discussion see Rothschild et al., 2019). Utilizing the novel XDAR, our findings revealed that the degree to which an individual's everyday routines align with cultural standards in essential areas of personal responsibility is

a reliable predictor of self-esteem. Furthermore, our findings expand the scope of TMT beyond its traditional focus on self-esteem as an affective, subjective measure of cultural alignment, as Greenberg et al. (1986) initially posited and discussed in the context of Becker's work (1971). The present studies reveal that individual differences in adaptive routines can reliably predict how people perceive the importance and achievability of cultural standards and their level of motivation to avoid self-awareness in the face of mortality reminders (e.g., Wisman et al., 2015).

Refinements

The dynamics demonstrated by Studies 4–7 build on the RTM model and illuminate the subtleties of terror management strategies. A critical insight from the findings of Studies 4–7 is that individual differences in adaptive routines have a more intricate influence on responses to mortality reminders than the RTM model previously accounted for. The results paint a nuanced picture: individuals higher in adaptive routines tend to align with cultural standards strongly. They may not require additional affirmation when confronted with reminders of mortality. In contrast, those with lower levels of adaptive routines do not uniformly seek to reinforce their beliefs in these standards as anticipated. These findings challenge the RTM model's assumptions regarding the impact of lower levels of adaptive routines. This finding suggested that such individuals may use self-escape strategies rather than reinforce their cultural worldview. Consequently, the RTM model should be adjusted to more precisely account for how individuals with different levels of adaptive routines respond to reminders of mortality. In the following two sections, we explore potential insights that, when confirmed, may inform refinements of the RTM model to achieve this goal.

How else might lower-XDAR individuals respond to reminders of mortality?

The discovery that individuals lower in adaptive routines respond to mortality reminders by seeking to escape self-awareness has significant implications. Existential

psychologist Rollo May (1967) proposed that the absence of self-awareness hinders individuals from adopting others' perspectives, exercising self-control, achieving creative accomplishments, and experiencing pride and higher self-esteem (empirically supported by Silvia & O'Brien, 2004). Conversely, the motivation to escape self-awareness has been linked to various maladaptive behaviors, including binge eating, self-harm, suicide attempts, and substance abuse (e.g., Baumeister, 1991; Feldman, 1988; Hull et al., 1983; Stein et al., 2007). Therefore, exploring avenues for more adaptive responses to reminders of mortality is essential.

Given the broad scope of our studies, we conducted post-hoc analyses on all ten domains of cultural standards examined in Studies 5–6. Regressions were conducted separately for each of the 10 items within the BICS and BACS inventories. While the results for all other items indicated non-significance ($ps \geq .119$), a significant interaction effect emerged in the standards for education (specifically BICS Item 5 and BACS Item 5). This prompted further exploratory analysis to investigate whether individuals lower in adaptive routines bolstered their beliefs in the achievability and importance of cultural standards specifically for education when exposed to mortality reminders.

Utilizing the same regression and simple slopes procedures as in Studies 5–6, we assessed effects on beliefs regarding the importance and achievability of cultural standards for education (BICS Item 5 and BACS Item 5), individually. At the final step of the regression model for BICS Item 5 ($R^2_{adjusted} = .05$), a significant interaction between mortality reminders and mean-centered XDAR scores was found ($B = -.49$, $SE = .20$, $t(196) = -2.46$, $p = .015$).[29] Similarly, for BACS Item 5, the interaction was significant ($R^2_{adjusted} = .03$, $B =$

[29] Additional analyses using the same regression model on BICS Item 5 scores indicated that the interaction between mortality salience and XDAR remained significant when controlling for the effects of self-esteem ($B = -.44$, $SE = .20$, $t(195) = -2.22$, $p = .027$) and when controlling for participants' age ($B = -.46$, $SE = .20$, $t(195) = -2.30$, $p = .022$).

−.51, *SE* =.18, *t*(381) = −2.86, *p* = .005). [30] Further, simple slopes analyses indicated that mortality reminders (compared to controls) prompted significant increases at lower levels of XDAR (– 1 *SD* from the centered XDAR mean) for both items (BICS Item 5, *p* =.002; BACS Item 5, *p* < .001), but not at higher levels of XDAR (+ 1 *SD;* BICS Item 5, *p* =.691; BACS Item 5, *p* = .735).

These post-hoc findings suggest that following mortality reminders, individuals lower in adaptive routines may bolster their beliefs in the importance and achievability of educational standards, thereby providing an avenue for more adaptive responses to existential threats. Despite inherent limitations, this insight aligns with the broader RTM model and underscores the potential of structured support in cultural domains like education to mitigate maladaptive responses. Future research should further explore this possibility and substantiate these findings, potentially contributing to an expanded understanding of how adaptive routines can influence responses to mortality reminders.

Considering the deficit of terror management defenses (both structural and cultural) associated with a lack of adaptive routines, it becomes evident that individuals lower adaptive routines may seek existential comfort when immersed in a structured environment, especially one that enhances their relationship with cultural standards. Implementing such dual-layer support for individuals lacking adaptive routines could provide reliable structure for everyday life while reinforcing one's place within the broader cultural narrative, potentially bolstering core terror management defenses and reducing the motivation for existential self-escape.

In this context, the role of education becomes particularly relevant. Most societies have designed their education systems to provide structure and cultivate skills and behaviors that align with cultural standards (Diehl & MacFarland, 2012; Levinson & Pollock, 2011).

[30] Additional analyses using the same regression model on BACS Item 5 scores indicated that the interaction between mortality salience and XDAR remained significant when controlling for the effects of self-esteem (*B* = −.51, *SE* =.17, *t*(380) = −2.97, *p* = .003) and when controlling for participants' age (*B* = −.51, *SE* =.18, *t*(380) = −2.83, *p* = .005).

Serving as a primary channel for the transmission of cultural values (Dekker, 2001; Levinson, 2000), education has proven effective. Indeed, higher education is consistently linked to positive outcomes across various cultural standards (Vila, 2000). From an RTM-based perspective, education may directly address the potential challenges associated with lower levels of adaptive routines, offering a structured pathway to cultural standards. Consequently, when mortality becomes salient, individuals lower in adaptive routines may gravitate toward education to bolster their sense of achievability and, by extension, their endorsement of cultural standards.

How else might higher-XDAR individuals respond to reminders of mortality?

Delving into a developmental account of TMT (Solomon et al., 1991; also discussed in Chapter III), we can trace how individual differences in adaptive routines might shape more specific responses to mortality reminders. The development of existential defenses begins in childhood, where the initial lessons of value and safety are imparted through meeting parental standards. As children mature, their source of existential security shifts from the parents to the broader culture (also see Greenberg et al., 1997). During this process, the young adult constructs a personal version of the cultural worldview, influenced by exposure to cultural elements like authorities and institutions. This personalization of the cultural worldview motivates them to identify replicable behaviors that confer self-esteem and a more robust sense of safety (see Crocker & Wolfe, 2001). In sum, this developmental account of TMT suggests that people's adaptive routines may be intricately intertwined with the sources from which individuals derive their self-esteem and psychological security. Consequently, a more detailed examination of these sources, as reflected in individuals' adaptive everyday routines, might reveal the aspects of their worldview they are most inclined to defend.

Recognizing that an individual's adaptive everyday routines may indicate the personalized sources from which they draw their self-esteem and psychological security

necessitates refining the RTM model. Prior TMT research on sources of self-esteem underscores how various investments in specific types of routine behavior might shape responses to reminders of mortality. For instance, Routledge and colleagues (2004) recruited participants for whom tanning was important to their self-esteem, a factor indicative of routine tanning. Following reminders of mortality, these participants exhibited a decrease in their intention to purchase higher sun protection products, thus affirming their beliefs in the importance of a tanned complexion despite increased health risks. Complementing this finding, other studies reveal that responses to mortality salience are moderated by individual differences in the areas where people derive their self-esteem, such as physical appearance, academic achievement, displays of physical strength, and compassion towards others (for review, see Pyszczynski et al., 2004). These examples collectively suggest how adaptive routines in the areas of personal care, academic study, physical fitness, and social engagement might shape one's response to existential threats.

The XDAR scale serves as an effective tool for finding nuanced sources of self-esteem that individuals may use as defenses against mortality concerns. Take, for example, someone with higher levels of adaptive routines in physical fitness. TMT suggests that this person likely values physical fitness not just for health, but as a critical source of self-esteem and psychological security. Faced with reminders of mortality, they may intensify their commitment to fitness, advocating more vigorously for a fitness-centric lifestyle or rejecting viewpoints that devalue physical activity. By assessing the depth of an individual's engagement in adaptive routines within valued domains (like physical fitness), the XDAR scale could help predict how much an individual relies on these areas as buffers against the fear of death. Such targeted application of the XDAR would enable a detailed exploration of how commitments to specific cultural domains act as personal bulwarks against mortality awareness.

To recap, a refined RTM model, incorporating a developmental account of terror management defenses and empirical evidence from studies examining individualized sources of self-esteem, provides a framework for achieving a more nuanced and comprehensive understanding of how individual differences in adaptive routines influence responses to reminders of mortality. This refined model retains the original aspects of the model while delving into the personalized ways individuals invest in the cultural worldview and self-esteem as reflected in their routine behaviors.

As we proceed to the next section, we will examine insights from both sets of studies presented in this thesis within the broader context of converging research on self-awareness and its role in terror management. This integrated perspective will guide our exploration of everyday routines as a mechanism for optimal self-regulation, highlighting the dynamics between everyday behavior, mortality awareness, and self-esteem.

Toward an Optimal Self-Regulation

In his initial essay proposing the existential escape hypothesis, Wisman (2006) posits a complement to the dual-process defense model proposed by TMT (see Pyszczynski et al., 1999). First, Wisman (2006) identifies inherent weaknesses in both proximal and distal defenses. Proximal defenses, while offering temporary relief, primarily involve pseudo-logical denials of mortality concerns (e.g., affirming faith in one's youth or vitality) or consciously distracting oneself from mortality concerns (e.g., choosing to focus on other things). As Wisman (2006) points out, unfortunately, proximal defenses offer only momentary relief at best. On the other hand, distal defenses aimed at the transcendence of mortality concerns (e.g., personal value signaling the attainment of symbolic immortality or the promise of an afterlife) generally rely on arbitrary and socially constructed worldviews that require constant validation. Moreover, the multiplicity of contradicting worldviews leaves individuals uncertain about the validity of their belief systems, potentially fostering

defensiveness, outgroup derogation, and extremism. Finally, reducing self-awareness may serve as a distal defense against mortality awareness (Moynihan et al., 2022; Wisman et al., 2015). However, the mechanisms for reducing self-awareness highlighted in current literature, including binge eating, self-harm, suicide attempts, and substance abuse, present significant drawbacks (Baumeister, 1991; Feldman, 1988; Hull et al., 1983; Stein et al., 2007). These behaviors are essentially terminal, maladaptive, or only sustainable for short periods.

Given these limitations, Wisman (2006) poses a critical question: Can individuals develop a more effective existential defense mechanism that is firmly rooted in the real world, resilient, and aligned with their internalized values, without exacerbating objective self-awareness? In response, we propose that adaptive everyday routines might offer such a defense mechanism. Converging evidence from diverse areas of neuroscience and psychology suggests that adaptive everyday routines can subtly reduce self-awareness, while avoiding the negative consequences associated with other defense mechanisms. Accordingly, we explore the potential of adaptive everyday routines as a form of optimal self-regulation, discussing the implications for managing self-awareness through engagement in these routines. To lay the groundwork, we begin by examining the advantages and disadvantages of self-awareness and how both adaptive and non-adaptive routines may be employed to regulate self-awareness.

The Dichotomy of Self-Awareness

While self-awareness can offer numerous advantages, such as fostering introspection, personal growth, and the capacity to monitor and regulate one's behavior and emotions (Trapnell & Campbell, 1999), it also presents potential disadvantages. Emblematically, self-awareness allows humans to contemplate the consequences of life and death (Sedikides & Skowronski, 1997, 2000, 2003), giving rise to the awareness of mortality (e.g., Becker, 1973;

Wisman, 2006). Hand in hand, excessive self-awareness can lead to heightened stress and anxiety, particularly when individuals are overly critical or judgmental of their thoughts, feelings, or actions (Carver & Scheier, 1978, 1981). This self-scrutiny can create constant pressure to meet exacting standards, potentially leading to distress (Brown & Dutton, 1995; Mor & Winquist, 2002). Additionally, continuous self-awareness may result in rumination, where individuals obsessively focus on negative thoughts or past mistakes, potentially contributing to conditions like depression (Nolen-Hoeksema, 1991). Furthermore, in social situations, excessive self-awareness can lead to self-consciousness and social anxiety as individuals become overly concerned about how others perceive them (Schlenker & Leary, 1982). Moreover, self-awareness may encourage perfectionism and hinder well-being (Hewitt & Flett, 1991). Given the potential pitfalls of self-awareness, finding a balance that allows individuals to benefit from self-awareness while avoiding its pitfalls is crucial. Striking this balance would involve fostering a degree of adaptive self-escape, a mechanism that mitigates the negative aspects of self-awareness and promotes psychological resilience.

The notion of self-escape, or states of reduced self-awareness, is widely acknowledged as a strategy for temporarily alleviating the demands of everyday life (Cohen & Taylor, 1992). Some scholars have even suggested that self-escape is an inherent survival mechanism intrinsic to human beings (Tuan, 1998). However, some studies call into question the adaptiveness of self-escape. Most prominently, escapism is associated with suppressing the awareness of stressors that underlie distressing situations (Folkman & Lazarus, 1980, 1985; Lazarus & Folkman, 1984). Similarly, Baumeister (1990, 1991) has described suicide attempts, eating disorders, and substance abuse as means of escaping self-awareness. These detrimental activities provide momentary relief by diverting their focus from the more abstract self-reflection and toward concrete actions. Baumeister posits that this shift of focus toward concrete actions diminishes self-evaluation, thus alleviating the burden of self-

awareness. However, can states of diminished self-evaluation and reduced self-awareness be achieved through more adaptive means?

Leary and colleagues (2006) offer a novel perspective on self-regulation, suggesting that there are indeed more adaptive ways to reduce self-awareness. While theory and research dealing with self-regulation have focused primarily on mechanisms that involve higher levels of self-reflection, Leary et al. (2006) identify a process of self-regulation in which people relinquish deliberate, conscious control over their behavior to foster less deliberative and more automatic responses (cf. Leary & Guadagno, 2011). This adaptive self-regulatory process facilitates a reduction in self-awareness and promotes a focus on the present and concrete thinking, like Baumeister's idea of self-escape yet free from the maladaptive effects. These hypo-egoic states offer a more adaptive way to decrease self-awareness without invoking maladaptive behaviors.

If Leary and colleagues are correct, escaping the burden of self-awareness may also be achieved through engaging in adaptive behaviors, a notion upheld by Csikszentmihalyi's (1990; Nakamura & Csikszentmihalyi, 2014) work on the experience of activity immersion (i.e., flow states; also see Harris et al., 2017), as well as research on task absorption (Stenseng at al., 2012, 2021) and sports and leisure activities (e.g., Hutchinson et al., 2006; Iwasaki, 2003). Expanding upon the notion that optimal self-regulation requires the management of self-awareness, we will now explore the precise function of everyday routines in this process.

Routines as Self-Escape

The existentialist notion that people may embrace routines, at times, to allow the self to safely fade from conscious awareness (e.g., Fromm, 1956; also see Chapter I), though off-step from mainstream work on self-regulation, has received some theoretical attention. Leary et al. (2006) posit that these hypo-egoic self-regulatory states may be achieved by repeating a

behavior until it is automatic. Through repetition, they argue, individuals can reduce the demand for self-awareness and, thus, the proportion of time spent as self-aware.

A synthesis of findings from research in cognitive neuroscience supports Leary and colleagues' reasoning. For instance, prior research demonstrates that repetition and the consequent development of habitual control are typically associated with a significant redistribution of brain activity away from the prefrontal cortex (PFC: see reviews in Jonides, 2004; Kelly & Garavan, 2005). Broadly, the PFC is central to executive functioning (e.g., attentional control, cognitive inhibition, inhibitory control, working memory, and response inhibition). However, more specifically, the PFC's medial region is central to processing information about the self (for reviews, see Heatherton et al. 2006; Moran et al. 2013; Northoff et al. 2006). In short, the habitual enactment of routine behavior has been associated with reduced activity in the area of the brain responsible for evaluating one's immediate behavior and the self, theoretically decreasing the momentary accessibility of the relationship between one's behavior and oneself.

Further, direct experimental evidence in cognitive neuroscience from Gruberger et al. (2015) provides causal evidence that such a redistribution of brain activity can reduce the momentary capacity for self-awareness. Specifically, Gruberger and colleagues demonstrated that transcranial magnetic stimulation applied over the human PFC, dampening neural activity in the region, resulted in increased reports of reduced self-awareness (see also Jonker et al., 2017). Since everyday routines can lead to a similar redistribution of neural activity away from the PFC, comparable reports of lowered self-awareness during routine engagement would be expected. In the next section, we will briefly discuss the potential implications of everyday routines as mechanisms for reducing self-awareness.

Existential Escape by Adaptive Routines

A refined RTM model, informed by the empirical findings of this thesis and the converging evidence discussed in this chapter, suggests that adaptive routines not only support self-esteem by aligning behavior with cultural standards but may also facilitate an escape from self-awareness. Importantly, these attributes of adaptive routines are consistent with Wisman's (2006) proposed criteria for optimal self-regulation: "In general, such a defense would be grounded in the real world, would not be fragile, would be well connected to the individual's genuine values, but would not promote objective self-awareness" (p. 323). Essentially, Wisman's proposition describes a form of self-regulation wherein individuals can go about their lives in general alignment with their values from an array of cultural standards without evoking self-awareness.

Although Wisman's perspective may initially appear to deviate from traditional views of self-regulation, an accumulation of evidence challenges these preconceptions. For example, it has been argued that higher levels of self-control may involve the increased ability to make behaviors automatic (Baumeister & Alquist, 2009). Consistent with this notion, meta-analytic evidence indicates that trait self-control is more strongly associated with automatic behaviors than deliberate ones (De Ridder et al., 2012). Building on this notion, more recent studies suggest that successful self-control may not necessarily require conscious effort but can also be characterized as more automatic and effortless, with individuals higher in trait self-control employing adaptive routines to guide their behavior (De Ridder & Gillebaart, 2016; Gillebaart & De Ridder, 2015). Studies on effortless self-control support this reasoning, indicating that people with higher self-control tend to have more adaptive habits (Adriaanse et al., 2014; Galla & Duckworth, 2015).

In sum, these findings suggest that adaptive routines can serve as a valuable strategy for achieving a more optimal form of self-regulation. In effect, by engaging in adaptive

routines, individuals can reinforce their value within the greater culture while diminishing self-awareness (cf. Fromm, 1956). Notably, William James (1890) may have foreshadowed this conclusion over 130 years ago when he said:

> There is no more miserable human being than one in whom nothing is habitual but indecision, and for whom the lighting of every cigar, the drinking of every cup, the time of rising and going to bed every day, and the beginning of every bit of work, are subjects of express volitional deliberation. Full half the time of such a man goes to the deciding, or regretting, of matters which ought to be so ingrained in him as practically not to exist for his consciousness at all (p. 122).

James' perspective reinforces the notion that, beyond facilitating personal goals within a milieu of cultural standards, adaptive routines can also serve provide an escape from the burden of self-awareness. This dual function underscores the importance of such routines in managing existential anxieties, offering a nuanced understanding of how individuals can navigate the complex give-and-take of managing self-awareness in the pursuit of self-esteem.

Escape by Non-Adaptive Routines

However, suppose the process of repeating specific behaviors until they become automatic indeed serves to reduce self-awareness. In that case, it follows that non-adaptive or maladaptive routines may also reduce self-awareness, albeit in a less optimal and less adaptive capacity. Unfortunately, when individuals engage in non-adaptive routines with reduced self-awareness, the likelihood of their behavior improving diminishes. Self-awareness, which encompasses the awareness of one's thoughts, emotions, and behaviors (commonly referred to as self-monitoring), plays a pivotal role in various behavior change interventions (Gollwitzer & Sheeran, 2006; Oettingen & Gollwitzer, 2010). Previous research suggests that heightened objective self-awareness can lead to increased adherence to positive norms, enhanced performance in routine tasks (Wicklund & Duval, 1971), and facilitate the

cessation of maladaptive routines, such as smoking (Chua et al., 2011). Conversely, individuals who do not engage in self-monitoring are less likely to identify problematic behaviors, set specific goals for change, and are ultimately less likely to make positive changes in their behavior (for a comprehensive review, see Fuglestad & Snyder, 2009).

Consequently, individuals who perceive themselves as unable to meet self-relevant standards may become increasingly motivated to seek self-escape (Duval & Wicklund, 1972; Wicklund & Gollwitzer, 1981, 1982), often leaning towards maladaptive self-escape strategies. This pattern is evident in the association between lower self-esteem and increased engagement in maladaptive behaviors that reduce self-awareness, such as alcohol and tobacco abuse (e.g., Abood & Conway, 1992) and overconsumption (Mandel & Smeesters, 2008), all of which are linked to reduced self-awareness (Baumeister, 1991).

Thus, current research underscores the nuanced roles that self-awareness plays at distinct stages of behavioral change. While intermittent self-awareness is crucial for initiating positive change and boosting performance, the need for persistent self-awareness lessens once individuals have set clear goals and established adaptive routines. The challenge emerges for those lower in adaptive routines or lower in self-esteem, for whom increased self-awareness can become a source of discomfort. In these cases, the aspiration for positive change, when faced with continual failures, can intensify self-awareness. This, in turn, can amplify feelings of inadequacy, transforming self-awareness from a catalyst for growth into a painful reflection of one's failures.

A Call for Interventions

Considering the dialectical role of self-awareness in behavior change, individuals lower in adaptive routines may particularly benefit from interventions aimed at fostering the development of adaptive routines in a way that aligns with the individual's personal and cultural values. This suggestion finds support in our post-hoc findings mentioned earlier,

indicating that individuals lower in adaptive routines, when reminded of their mortality, were motivated to bolster beliefs in the importance and achievability of standards for education. From a TMT perspective, education plays a vital role, serving not only as a foundation for structure and routine but also as a primary vehicle for perpetuating cultural standards (see Dekker, 2001; Diehl & MacFarland, 2012; Levinson, 2000; Levinson & Pollock, 2011). Such insights underscore the potential of interventions that not only encourage the establishment of adaptive routines but also specifically target the reinforcement of values in areas deemed critical by the culture.

By guiding individuals toward the development of adaptive routines in culturally valued domains, interventions can foster a deeper integration into and identification with cultural narratives, thereby enhancing a sense of personal value within these frameworks. This increased sense of belonging and value should, in turn, alleviate the psychological burden of self-awareness, making it a less distressing experience and reducing the motivation for existential self-escape. In essence, by solidifying one's place within the cultural worldview through adaptive routines, the sting of heightened self-awareness diminishes, allowing individuals to buffer the impact of mortality awareness with greater ease and resilience. Such interventions promise to bolster individual self-esteem and cultural alignment and transform self-awareness from a gateway to existential anxiety into a manageable and empowering aspect of the human condition. Within this rich context, adaptive routines can support the capacity for enduring personal growth. In the words of William James, "The more of the details of our daily life we can hand over to the effortless custody of automatism, the more our higher powers of mind will be set free for their own proper work" (1890, p. 122).

Last Words

In sum, this thesis introduces, for the first time, the notion that everyday routines play a critical role in terror management. The empirical evidence presented supports this novel concept: Study 1 demonstrated that individuals lower in self-esteem—considered TMT's barometer of existential protection—find their routines more appealing when reminded of their mortality. Study 2 showed that contemplating these routines following mortality reminders can significantly reduce the accessibility of death-related thoughts, particularly for those lower in self-esteem. Notably, Study 3 revealed that individuals lower in self-esteem are less open to changing their routines after such reminders, suggesting that established routines provide consistent structure and psychological security that are particularly valuable in the face of existential threats.

Moreover, while engaging in everyday routines helps to temporarily manage the awareness of mortality, other effects of an individual's routines persist even after the routines have concluded. Specifically, the lasting impact of engaging in these routines—how they shape one's alignment with cultural standards, beliefs about the importance and achievability of cultural standards, and one's self-esteem—continues to influence how individuals cope with the impact of mortality awareness. Supporting this cultural dimension of routine terror management, our studies demonstrate that lower levels of adaptive routines predict lower self-esteem (Studies 4–7), weaker beliefs in the importance and achievability of cultural standards (Studies 5–6), and a heightened motivation to self-escape that is amplified by mortality reminders (Study 7). In direct contrast, higher levels of adaptive routines predict higher self-esteem (Studies 4–7), stronger beliefs in the importance and achievability of cultural standards (Studies 5–6), and a diminished motivation to self-escape that is not provoked by mortality reminders (Study 7).

In conclusion, adopting a terror management perspective to analyze everyday routines within the initial framework of the RTM model has illuminated various ways individuals manage the awareness of personal mortality. While further refinements are imperative, this exploration has identified several promising avenues for enhancing the structural and cultural dimensions of everyday routines within the RTM model. One of the most critical priorities among these future undertakings is the development of tailored interventions to reduce the inclination toward self-escape and to nurture more adaptive responses to mortality awareness, particularly among individuals lower in adaptive routines. Additionally, advanced tools and methodologies should be devised to predict the specific defense mechanisms employed by individuals higher in adaptive routines, contingent upon the cultural investments embedded in their routines. As we advance our comprehension of these dynamics, a more sophisticated RTM model provides a comprehensive framework that will deepen our understanding of human behavior and pave the way for additional research directions and practical applications. I am optimistic that the insights presented here will inspire further exploration and discovery within existential psychology.

VII: References

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Appendix A

Excerpt from "The Growing Stone"

The automobile swung clumsily around the curve in the red sandstone trail, now a mass of mud. The headlights suddenly picked out in the night—first on one side of the road, then on the other—two wooden huts with sheet-metal roofs. On the right near the second one, a tower of coarse beams could be made out in the light fog. From the top of the tower a metal cable, invisible at its starting-point, shone as it sloped down into the light from the car before disappearing behind the embankment that blocked the road. The car slowed down and stopped a few yards from the huts.

The man who emerged from the seat to the right of the driver labored to extricate himself from the car. As he stood up, his huge, broad frame lurched a little. In the shadow beside the car, solidly planted on the ground and weighed down by fatigue, he seemed to be listening to the idling motor. Then he walked in the direction of the embankment and entered the cone of light from the headlights. He stopped at the top of the slope, his broad back outlined against the darkness. After a moment he turned around. In the light from the dashboard he could see the chauffeur's face[31], smiling. The man signaled and the chauffeur turned off the motor. At once a vast cool silence fell over the trail and the forest. Then the sound of the water could be heard.

The man looked at the river below him, visible solely as a broad dark motion, flecked with occasional shimmers. A denser motionless darkness, far beyond, must be the other bank. By looking fixedly, however, one could see on that still bank a yellowish light like an oil lamp in the distance. The big man turned back toward the car and nodded. The chauffeur switched off the lights, turned them on again, then blinked them regularly. On the

[31] In the original text, Camus describes the chauffeur's face as "black." In the present studies, this description was omitted to avoid unnecessary racial emphasis, as it was not relevant to our focus. The rest of the passage was used as written to preserve its intended meaning.

embankment the man appeared and disappeared, taller and more massive each time he came back to life. Suddenly, on the other bank of the river, a lantern held up by an invisible arm swung back and forth several times. At a final signal from the lookout, the chauffeur turned off his lights once and for all. The car and the man disappeared into the night. With the lights out, the river was almost visible—or at least a few of its long liquid muscles shining intermittently. On each side of the road, the dark masses of forest foliage stood out against the sky and seemed very near. The fine rain that had soaked the trail an hour earlier was still hovering in the warm air, intensifying the silence and immobility of this broad clearing in the virgin forest. In the black sky misty stars flickered.

Appendix B

The Cross-Dimensional Adaptive Routines Inventory

The XDAR evaluates a broad range of adaptive routines relevant to adult life across six domains: morning, evening, domestic/housekeeping, physical activity, meals/snacking, and work/school. Each domain is assessed through two standard-scored items and two reverse-scored items. These items are designed to measure routines that are culturally deemed adaptive, as well as the adaptiveness of more general routines based on the respondents' assessment of the routines' outcomes. Items are assessed using a 101-point agreement scale (ranging from 0 to 100, where 0 = *completely disagree* and 100 = *completely agree*). Asterisks (*) indicate reverse-scored items.

Morning
1. I tend to wake up at roughly the same time every morning.
2. My mornings tend to be rushed and chaotic because something always comes up.*
3. My mornings are mostly smooth and peaceful.
4. The day always seems to sneak up on me.*

Evening
5. I tend to go to bed at roughly the same time every night.
6. I tend to stay up late, even when I don't need to.*
7. Before I know it, I feel myself drifting away when I'm in bed.
8. If I want it or not, my worrisome thoughts keep me up at night.*

Domestic/Housekeeping
9. I routinely set aside time in my day for most household chores.
10. I tend to leave most household chores until they get out of hand.*
11. As a habit, I always leave my important things (e.g., keys) in the same spot.
12. I tend to forget where I put small things such as keys or a wallet.*

Physical Activity
13. I routinely set aside time in my day for physical exercise.
14. During the week, I dedicate my free time to vegging out in front of my favorite media.*
15. I naturally keep a good posture, whether sitting or standing.
16. When at my desk or comfortable seating, I may go hours without standing before realizing it.*

Meals/Snacking
17. I tend to plan my meals so that I receive proper nutrition.
18. I'm sure to have my favorite sweet or salty snack available throughout the day.*
19. Eating healthy is second nature to me.
20. When walking past a plate of sweets or cookies, I can't resist taking one.*

Work/School
21. My work (or school) routine helps me focus on priorities and avoid distractions.
22. At work (or school), I don't have enough time to get important things done.*
23. My workday (or school day) runs like a well-oiled machine.
24. My workday (or school day) tends to feel out of control.*

Appendix C

Exploratory Factor Analysis of the XDAR Scale

The purpose of conducting an exploratory factor analysis on the XDAR scale is to investigate the underlying factor structure of adaptive routines. This analysis seeks to identify the distinct dimensions that constitute adaptive routines and assess whether the items on the XDAR scale group into meaningful, independent factors. By exploring these factors, the EFA aims to clarify how routines are distributed across various life domains and to provide a preliminary understanding of the multidimensional nature of routines and their potential role in influencing self-esteem. Identifying these factors will contribute to a deeper understanding of how adaptive routines function within the broader framework of the RTM model.

In Studies 4–7, the XDAR scale was administered prior to any experimental manipulations in all studies, ensuring that participants' responses were not influenced by treatment effects. Additionally, the same variables were administered in the same order prior to the XDAR across all studies, further enhancing methodological consistency. These consistencies ensured that all participants encountered identical conditions leading up to the XDAR, minimizing any potential variability in responses. As a result, combining the data from Studies 4–7 ($N = 905$) provides greater statistical power and allows for a more robust factor analysis, capturing a broader and more representative structure of adaptive routines, without concern for confounding variables related to study conditions.

Method

A Principal Axis Factoring (PAF) extraction method was employed, accompanied by Promax rotation (an oblique method) to allow for potential correlations between factors. This approach was chosen given the assumption that routines in different domains of life are likely interrelated and may contribute jointly toward an individual’s existential defense system.

Results

Sample Adequacy

The data were suitable for factor analysis, as indicated by the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which was 0.834 (above the commonly accepted threshold of 0.6). Additionally, Bartlett's Test of Sphericity was significant ($\chi^2 = 6538.450$, $df = 276$, $p < .001$), indicating sufficient correlations between the items for conducting factor analysis.

Factor Extraction

Six factors with eigenvalues greater than 1 were extracted, collectively accounting for 43.32% of the total variance (see Table 6). Although this result is below the ideal range for factor analysis (60-70%), it is still meaningful given the nature of the XDAR, which assesses adaptive routines across six domains of everyday life. Behavioral inventories, especially those that span multiple domains, often result in lower percentages of variance explained compared to scales measuring single psychological traits. The variance explained by these factors provides valuable insights into the underlying structure of routines in everyday life. The six extracted factors, along with their loadings and associated items, are summarized in Table 7.

Table 6

XDAR Variance Explained by Factors in Exploratory Factor Analysis

		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Factor	Initial Eigenvalues	Extracted	% of Variance	Cumulative %	Total
1	5.59	5.06	21.06	21.06	3.45
2	2.60	2.11	8.78	29.84	3.33
3	1.92	1.31	5.44	35.29	3.51
4	1.33	0.78	3.23	38.52	2.80
5	1.19	0.64	2.66	41.18	1.18
6	1.02	0.51	2.14	43.32	2.01

Table 7

XDAR Simplified Pattern Matrix with Variance Explained and Key Item Loadings

Factor	% Variance Explained	Key Items	Loading
Factor 1: Physical Health Routines	21.06		
		19: Eating healthy is second nature to me.	0.87
		17: I tend to plan my meals so that I receive proper nutrition.	0.65
		15: I naturally keep good posture, whether sitting or standing.	0.64
		13: I routinely set aside time in my day for physical exercise.	0.54
Factor 2: Effective Work/School Routines	8.78		
		24: My workday tends to feel out of control.*	0.75
		22: I don't have enough time to get important things done.*	0.68
		23: My workday (or school day) runs like a well-oiled machine.	0.45
Factor 3: Morning and Evening Routine Stability	5.44		
		1: I tend to wake up at roughly the same time every morning.	0.74
		5: I tend to go to bed at roughly the same time every night.	0.68
		11: As a habit, I always leave my important things (e.g., keys) in the same spot.	0.59
Factor 4: Non-Goal-Oriented or Avoidant Routines	3.23		
		14: I dedicate free time to vegging out in front of media.*	0.55
		6: I tend to stay up late, even when I don’t need to.*	0.46
		16: I may go hours without standing.*	0.43
Factor 5: Unhealthy Snacking Habits	2.66		
		20: I can’t resist taking sweets.*	0.57
		18: I’m sure to have my favorite snack available throughout the day.*	0.50
Factor 6: Quality of Morning Routines	2.14		
		2: My mornings are rushed and chaotic.*	0.69
		3: My mornings are mostly smooth and peaceful.	0.57

**Reverse-scored item*
Items loading below .40 excluded.

Table 7 (on the previous page) presents a simplified version of the factor structure, highlighting the key item loadings and the percentage of total variance explained by each factor. By excluding cross-loaded items and those with conceptual misalignment or redundancy, the table provides a concise view of how the items align with the factors, while preserving the core insights from the factor analysis. Communalities were also reviewed to assess how well each item was explained by the factors.[32]

Specifically, Item 12 ("I tend to forget where I put small things such as keys or a wallet") was excluded from Factor 3 due to potential redundancy with Item 11, which had a stronger and more conceptually positive association with Factor 3. Further, the weaker loading (.41) and the negative framing of routine stability made Item 12 a less clear fit for Factor 3.

Similarly, Item 21 ("My work (or school) routine helps me focus on priorities and avoid distractions") was excluded primarily due to conceptual misalignment with the factors. Given the item's focus on work/school routines, it was excluded to maintain the conceptual clarity of Factor 1, which focuses on physical health routines.

Lastly, Item 23 ("My workday (or school day) runs like a well-oiled machine") showed cross-loading in the pattern matrix, with loadings of 0.49 on Factor 1 and 0.45 on Factor 2**.** Despite these similar loadings, the item was assigned to Factor 2 due to its stronger conceptual alignment with work/school routines. Factor 2 represents effective routines for managing work and school tasks, making this item a better fit within that factor, and this decision was made to maintain the conceptual clarity of the factor structure.

[32] Communalities provide an indication of how much variance in each item is explained by the extracted factors. For most items, the communalities were moderate to strong, suggesting a reasonable fit with the factor structure. For instance, Item 19 ("Eating healthy is second nature to me") had a high extraction communality of 0.72, indicating that a large portion of its variance is explained by the factors. Conversely, items such as Item 7 (communality = 0.16) and Item 6 (communality = 0.27) had relatively low communalities, suggesting weaker alignment with the factors. While communalities were not used as the primary basis for excluding items, they provide additional insight into how well the factor model fits the data.

Additionally, items with factor loadings below 0.40 in the pattern matrix were excluded to ensure that only items with meaningful contributions to the factors were retained. This threshold was used to prioritize clarity and to focus on the most impactful items for each factor.

Factor Correlations

The factor correlation matrix revealed significant correlations between certain domains, indicating that routines across different life areas are interrelated. For example: Factor 2 (Effective Work/School Routines) and Factor 3 (Morning and Evening Routine Stability) were highly correlated (r = .57), suggesting that individuals who maintain effective work routines also tend to have consistent morning and evening routines. Factor 1 (Physical Health Routines) and Factor 3 (Morning and Evening Routine Stability) were moderately correlated (r = .42), indicating that individuals who prioritize physical health routines may also maintain stable morning and evening routines. However, certain factors, such as Factor 5 (Unhealthy Snacking Habits)**,** showed weaker correlations with other domains, suggesting that routines related to unhealthy snacking may operate more independently from other life domains.

Table 8

XDAR Factor Correlation Matrix

Factor	1	2	3	4	5	6
1	1.00	0.20	0.42	0.34	-0.05	0.11
2	0.20	1.00	0.57	0.43	0.03	0.40
3	0.42	0.57	1.00	0.38	0.02	0.29
4	0.34	0.43	0.38	1.00	0.14	0.29
5	-0.05	0.03	0.02	0.14	1.00	0.20
6	0.11	0.40	0.29	0.29	0.20	1.00

Discussion

The exploratory factor analysis of the XDAR scale provides critical insights into the multidimensional nature of adaptive routines, reinforcing the idea that routines exist across distinct life domains and contribute to self-esteem in diverse and context-dependent ways. The six factors extracted from the XDAR scale each represent an essential domain of daily functioning, supporting the view that routines in different areas of life are independent yet collectively contribute to an individual's ability to meet cultural standards and, in turn, support self-esteem. This finding is aligned with TMT, which posits that individuals use various resources to buffer against mortality concerns, with self-esteem being a primary defense mechanism (Greenberg et al., 1997).

Although the six factors extracted account for a total of 43.32% of the variance in the XDAR scale, this is meaningful given the scale's purpose of assessing adaptive behaviors across multiple life domains. As expected, the explained variance is somewhat lower than what might be achieved with a trait-based scale, which typically focuses on more stable, personality-driven constructs. The XDAR, however, captures routines—behaviors that can vary considerably depending on life circumstances. Given the contextual and flexible nature of routines, the variance explained by the extracted factors offers valuable insights into how these behaviors are structured in daily life.

Notably, the top two factors, Physical Health Routines and Effective Work/School Routines, together account for nearly 30% of the variance, making them particularly important domains for further investigation. The Physical Health Routines factor, which explains 21.06% of the total variance, underscores the critical role that routines related to physical activity, nutrition, and posture play in helping individuals meet cultural standards for physical fitness. Physical fitness is often a significant source of self-esteem, as many cultures emphasize the value of health and physical appearance. This factor likely reflects how

individuals establish routines that help them maintain or improve their physical well-being, aligning with cultural expectations of fitness (Hoare & Cosgrove, 1998; Kristjánsson et al., 2010).

In the context of mortality reminders, physical health may also serve as a buffer against existential anxiety. According to TMT, physical health and fitness can help mitigate the impact of mortality concerns because they enhance a person's sense of control and invulnerability (Pyszczynski et al., 1999). The self-regulatory routines involved in staying healthy can symbolically counteract feelings of bodily decay or weakness associated with the awareness of death. Thus, the high variance explained by this factor suggests that physical health routines are a key component of adaptive behavior, serving both to meet cultural standards and to manage death anxiety more directly.

The second factor, Effective Work/School Routines, which accounts for 8.78% of the variance, highlights the importance of routines for providing structure and bolstering productivity in everyday life (Dunn, 2000). This factor encompasses routines that help individuals stay organized, focused, and productive in their work or school environments. Given the significant amount of time people spend in these settings, it is not surprising that this domain emerged as a distinct and highly influential factor.

Work and school environments are central to identity formation and are often used as markers of social status. When people meet someone new, questions like "What do you do for a living?" or "Where did you go to school?" are commonly asked as a way of sizing up an individual's achievements and competence. The routines that individuals establish in their work or school lives may play a critical role in how they are perceived by others and, importantly, how they perceive themselves. Workplace success or academic achievement is often directly tied to an individual's sense of self-worth (Crocker & Wolfe, 2001). Therefore, the high importance of this factor in explaining variance suggests that adaptive routines in

this domain significantly support self-esteem by contributing to a person's ability to meet cultural standards related to career and education.

Implications for the RTM Model

The results of the factor analysis underscore the importance of viewing adaptive routines as multifaceted, with each domain contributing uniquely to an individual's ability to meet cultural standards. Adaptive routines in one area of life do not necessarily predict adaptive routines in another, which reinforces the need to study routines across multiple domains. This finding supports the RTM models underlying assumption that routines in different areas of life contribute independently to an individual's overall well-being and self-esteem.

Future research should further investigate the specific contributions of routines within each domain, particularly how routines related to physical health, work/school, and other life areas support self-esteem and mitigate existential concerns in distinct ways. The connection between physical health routines and the mitigation of death anxiety, in particular, warrants closer examination. Additionally, work/school routines should be explored for their role in promoting self-esteem and enabling individuals to manage the impact of mortality reminders more effectively.

Appendix D

Exploring Dead Ends: Lessons Learned from Non-Confirmatory Studies

Navigating the winding paths of scientific inquiry can often lead researchers to unexpected destinations. However, non-confirmatory studies that do not align with original hypotheses are not mere footnotes in the annals of research. Indeed, such studies can serve as signposts that enrich our understanding and refine our questions. The value of learning from non-confirmatory results is well-documented. Kuhn (1962), in "The Structure of Scientific Revolutions," emphasizes how anomalies and unexpected findings are essential for the progress of science, as they may indicate the limitations of current theories and prompt the development of new, more comprehensive frameworks. Similarly, Firestein (2012), in "Ignorance: How It Drives Science," argues that what we do not know or what we get wrong propels us further than what we get right, highlighting the importance of questions and uncertainties in driving scientific discovery.

In developing the RTM model, a few such "dead-end" studies challenged us to reconsider our initial assumptions and refine our approach. These studies highlight the complex relationship between existential motives and everyday routines. This appendix presents a concise overview of these studies and discusses their insights into developing the RTM model. It is hoped that highlighting these studies can prevent future researchers from embarking on futile paths, as Franco et al. (2014) noted. By embracing the full spectrum of research outcomes, psychological science advances through a collaborative and iterative process of hypothesis testing and theory refinement, ensuring that our collective knowledge is built on transparency and rigor.

Routines and Cognitive Structuring

Prior studies suggest that mortality reminders can increase preference for well-structured interpretations of other people, events, and personal experiences, i.e., cognitive

structuring. Furthermore, threatening (or affirming) sources of structure should increase (decrease) the impact of mortality awareness and moderate the effects of mortality reminders on other compensatory processes (for reviews, see Greenberg et al., 2013; Swanson & Landau, 2019; also see Ch. II of this thesis). At a fundamental level, cognitive structuring reinforces conceptions of the world as predictable, orderly, and capable of conferring and sustaining personal value. However, mortality reminders may not increase structure-seeking equally across individuals.

Previous research shows that people vary in their dependence upon structure. While some rely on straightforward, unequivocal understanding and recoil from ambiguity, others embrace—and indeed revel in—the uncertain, the enigmatic, and the ever-changing (Rokeach, 1960; Kruglanski, 1993; Neuberg & Newsom, 1993). Researchers capture this variability with measures like the Personal Need for Structure Scale (PNS), assessing agreement with such statements as: "I enjoy having a clear and structured mode of life" and "I find that a consistent routine enables me to enjoy life more" (Thompson et al., 2001). Although TMT proposes a fundamental need to impose structure onto the world, prior studies have found that individuals higher in PNS are more likely to respond to mortality reminders by imposing cognitive structure.

Our preliminary investigation posited that mortality reminders would prompt those higher in PNS to seek out and reinforce cognitive frameworks within their daily lives. This structure-seeking, we anticipated, would amplify their awareness of life's routines, effectively casting their existence in a more structured, routine-oriented light. Participants were subjected to a standard mortality salience manipulation, contrasting mortality with a control condition (i.e., Greenberg et al., 1992). After the traditional delay (e.g., Greenberg et al., 1994), we assessed participants' routine tendencies using the Concise Creature of Habit Scale (C-COHS), a tool we adapted from Ershe et al. (2017). Results indicated that

individuals scoring higher on the PNS scale also reported higher C-COHS scores, signifying perceptions of a more routine life. Despite our prediction, however, mortality reminders did not significantly increase C-COHS scores. Thus, our findings indicated that mortality reminders did not amplify the extent to which individuals higher in PNS viewed their lives as routine. This outcome called into question our initial belief that viewing life through a more predictable, orderly, more routine lens could mitigate concerns about mortality. Consequently, we re-evaluated the underlying premises of our hypothesis.

We considered that one reason mortality reminders did not lead high-PNS individuals to see their lives as more routine might be due to the strong main effect of PNS on C-COHS scores. Since high-PNS individuals already perceive their lives as significantly routine, this perception may insulate them against the unsettling effects of mortality awareness, preserving their view of life as predictable, orderly, and capable of conferring meaning and value. Accordingly, we theorized that high-PNS individuals would likely defend the value of their routine lives against explicit critiques, especially after reminders of mortality. To explore this hypothesis further, we conducted a follow-up study.

Routines and the Worldview

One of the foundational principles of TMT is the notion that reminders of mortality motivate people to affirm vital elements of their cultural worldview. This assertion stems from the premise that cultural worldviews function to alleviate concerns over personal mortality. In effect, if cultural worldviews function to reduce mortality concerns, then reminding people of their mortality should increase their reliance on these psychological structures. Traditionally, researchers test this hypothesis by assessing participants' evaluations of an essay author who either supports or opposes their cultural worldview (see Burke et al., 2010; Greenberg et al., 1990; Greenberg et al., 1992 for reviews). Extending this framework, we hypothesized that, after mortality reminders, individuals higher in PNS would

demonstrate a stronger preference for an individual endorsing the value of routine life and a more pronounced aversion to an individual critiquing it.

After measuring participants' PNS, participants were presented with either mortality reminders or an aversive control topic. This manipulation was followed by the traditional delay and exposure to essays that either endorsed or critiqued a routine-oriented lifestyle. Two follow-up questions assessing likeability and agreeability aimed to determine if mortality salience would amplify reactions to the essay authors. Findings revealed that individuals with a higher PNS exhibited stronger agreement and affinity towards the pro-routine author and less agreement and liking towards the anti-routine author. However, contrary to expectations, mortality reminders did not amplify these responses. Once again, we reconsidered our prior assumptions about the role of routines in terror management and decided to gather more data.

Exploring the Phenomenology of Routines

If routine terror management does not hinge on the isolated perception that life is objectively predictable and orderly, and if the intrinsic value of routines is not a critical aspect of the cultural worldview, then we must reassess: what role do routines play in terror management? Drawing on existential theorists, we considered that an individual's experience of some*thing* is intricately tied to the psychological function of that thing (Heidegger, 1927/2010; Sartre, 1943/2021; also see Husserl, 1936/1970). Thus, we reasoned that examining participants' phenomenological experiences with routines, especially following mortality reminders, could offer essential insights into which aspects of routines effectively mitigate mortality concerns (see Heine & Austin, 2001; Wertz, 2015). In an exploratory study, participants engaged in either routinized or non-routinized tasks after exposure to mortality reminders or a neutral control topic. Subsequently, they rated their agreement with statements about their subjective experience of the routine.

Once again, after measuring participants' PNS, participants were presented with either mortality reminders or a control topic followed by the traditional delay. Next, participants were assigned to either the routinized or non-routinized task. In both conditions, participants were presented with a graphic depiction of a target marked by a black dot. Each time participants clicked the target, the black dot appeared in a different place on the target. In the routine condition, the black dot followed a predictable inward spiral pattern until landing at the center of the target after 45 clicks. In the non-routine condition, the black dot followed no discernable pattern until landing at the center of the target after the same quantity of 45 clicks.

After the routine (or non-routine) task, participants were asked to rate their level of agreement with a series of statements, each designed to illuminate different facets of their phenomenological experience. We explored aspects such as valence ("I liked (disliked) the routine"), affect ("The task made me feel positive (negative) emotions"), sense of control ("The task gave me a sense of control"), and positive appraisals of reduced cognitive load ("I enjoyed not having to think about this task"). This approach aimed to comprehensively assess the subjective impact of engaging in routines. Consistent with prior research, we observed that higher PNS scores were associated with increased endorsement of routines. For example, participants with higher PNS scores liked the routinized task more and reported feeling a higher sense of control and increased positive affect during the routinized task. Conversely, participants with higher PNS scores disliked the routinized task more and reported increased negative affect in response to the non-routinized task. Results indicated that mortality reminders had no impact on these effects.

However, mortality reminders (compared to the control topic) were found to increase positive appraisals of reduced cognitive load among individuals higher (and not lower) in PNS. Moreover, this effect was found only in the routine condition, not the non-routine

condition. Specifically, we found mortality reminders lead to increased agreement with the statement “I enjoyed not having to think about this task,” but only among individuals higher in PNS in response to a routinized task.

The Denial of Dead Ends

In our endeavor to replicate the interaction effect observed in Study 3 by enhancing the salience of participants’ existing everyday routines, we faced considerable challenges. Despite employing a methodology that promised greater ecological validity, the expected results consistently eluded us. This ostensible dead end led us to a deeper theoretical examination of the existential relief provided by the simple act of engaging in a routine without conscious deliberation. Such existential relief, we hypothesized, might play a significant role in the appeal of everyday routines for individuals lower in self-esteem. Drawing on prior research, we considered how routines might serve as a sanctuary from the often-harsh lens of social scrutiny and self-assessment (Kahneman and Miller, 1986; see also Duval & Wicklund, 1972)—a lens that becomes particularly unforgiving in the aftermath of mortality salience, especially among those lower in self-esteem (Wisman et al., 2015; see also Arndt et al., 1998; Moynihan et al., 2021; Silvia, 2001). Rather than deterring us, these challenges enriched our understanding and played a pivotal role in developing the RTM model.