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### Start making sense: Compensatory responses to control- and meaning threats

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**Publication date**  
2012

[Link to publication](#)

#### **Citation for published version (APA):**

Rutjens, B. T. (2012). *Start making sense: Compensatory responses to control- and meaning threats*.

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## General Discussion

*“Existence – well what does it matter  
I exist on the best terms I can  
The past is now part of my future  
The present is well out of hand”*  
-Joy Division – Heart and Soul, 1980

This dissertation addressed two fundamental human needs: the need for control and the need for meaning. Human beings are the only animals capable of temporal awareness, in other words, they have the ability to step back and consciously reflect on their past, the present, and their future. When they ponder about the past, people are prone to impose causality and order on events, and infer meaning and sense from them (thus construing a meaningful narrative; see Kray et al., 2010; McAdams, Reynolds, Lewis, Patten, & Bowman, 2001). When they wonder about the future, people are motivated to believe that the events that have yet to happen will not occur haphazardly but will make sense. Moreover, the future should be relatively predictable and controllable. Indeed, we would rather not see the present, nor the past or the future, as “well out of hand” and void of meaning.

However, as much as people would like it to make sense, life is often replete with reminders of uncontrollability and randomness, and frequently poses existential questions. Such reminders can stem from large-scale societal events like natural disasters, economic crises, or wars and terrorism, but can also originate from mundane incidents in our daily lives, such as losing our job, our computer crashing right in the middle of typing a beautiful albeit somewhat long sentence, or the sudden illness of a close friend. In this dissertation, I focused on the compensatory beliefs and perceptions that people resort to when their perceptions of order and meaning are threatened. The first four chapters focused on the effects of control-threats and the need for order, the last two chapters on existential threat and the need for meaning.

In the next section I will summarize and discuss the main findings of this research. Then, I will discuss the relation between order and meaning, address similarities and differences, and relate these to compensatory belief

systems, with a special emphasis on belief in progress and religious belief (and their psychological functions). Finally, I will briefly elaborate on how future research might advance our knowledge of threat compensation. I will argue for the importance of a stronger focus on the processes underlying the relation between experienced threat and compensation and, perhaps most importantly, on the functional value and regulatory benefits of compensatory beliefs and perceptions.

### **Parts I and II: The effects of control-threat**

As described in the introduction, there are many societal and personal events that have the potential to trigger perceptions of uncontrollability and randomness. The majority of research that is devoted to understanding how people respond to lack of personal control focuses on the following secondary control strategies: illusory control, vicarious control, and compensatory control (cf. Rothbaum, Weisz, & Snyder, 1982; Kay, Gaucher, Napier, Callan, & Laurin, 2008; Langer, 1975). This dissertation focuses on the latter strategy, compensatory control, adhering to the idea that the primary and inclusive motivation behind control motivation is the need to perceive order in the world (Kay et al., 2008). It is interesting to note that much of the previous research on compensatory control beliefs emphasizes the reliance on external systems or agents of control, particularly religious or sociopolitical authorities. Especially the well-established effects of threat on religious belief are fascinating and a powerful testimony to the psychological needs that presumably underlie these effects. This is nicely illustrated by the fact that many studies reveal self-reported increases in belief in God as a result of threats to control and order, regardless of the degree of religiosity among the sample that is employed (e.g., Kay et al., 2008; Rutjens et al., 2010).

Obviously, these effects occur only as long as there is at least some variance in religious belief (so that a sample that is either very religious or totally atheist will likely not yield such effects), but it is interesting to see how religious belief is more malleable than might intuitively be assumed (see also Shariff, Cohen, and Norenzayan, 2008, who showed that exposure to strong secular arguments led to a decrease in both implicit and explicit religious belief). Interestingly, this malleability holds for secular, sociopolitical compensatory beliefs as well. For example, ample research inspired by terror management theory (TMT) has shown that existential threat enhances nationalism (e.g., Schimel et al., 2007) and the motivation to defend prevailing cultural values, regardless of preexisting political beliefs (but see Greenberg & Jonas, 2003 and Jost et al., 2007, for different views on the extent to which conservatism or ideological extremity buffer threat).

In my own research, described in Chapters 1 to 4, the point of departure was the compensatory control literature. I first replicated the effects of control-threat on religious belief (among a largely secular sample): Study 1 showed that control-threat increased preference for Intelligent Design over Darwin's Theory of Evolution as the best framework to explain the origin of life. However, Chapters 1 to 4 also extended previous research in a number of ways. Based on the importance of order and structure (Janoff-Bulman, 1992; Kay et al., 2008; Krantz, 1998; Kruglanski & Webster, 1996; Landau et al., 2004; Lerner, 1980; Pittman, 1998; Whitson & Galinsky, 2008), the research described in these chapters showed that an agent or external system that controls outcomes is neither essential nor always sufficient. Moreover, this research provided evidence for the idea that order affirmations that function as compensation for control-threat, and thus help to combat perceptions of

randomness, can also be derived from scientific theories; depending on the extent to which a theory offers an orderly perspective on processes and outcomes, people were motivated to shift their preference toward that particular theory. Finally, Chapters 3 and 4 showed that more abstract beliefs about society and humanity can also provide compensation for control-threat and restore perceptions of order.

Interestingly, Study 1 revealed that the increased threat-induced preference for Intelligent Design vanished when participants were provided with an alternative to Darwin's Theory of Evolution, which described evolution as an orderly and predictable process (Conway-Morris, 2005). Moreover, participants that were asked to choose between Darwin's theory and Conway-Morris' orderly take on evolution displayed the same preference shift as those choosing between Darwin's theory and Intelligent Design. I concluded that Intelligent Design and Conway-Morris' orderly theory can be deployed interchangeably to compensate for control-threat. Bolstering belief in a supernatural agent that provides order thus entails but one way to restore order, and affirming order without an agent seems to provide in the same need. Thus, an agent is not essential. An unpublished follow-up study (Rutjens, van Harreveld, van der Pligt, & Bremmer, 2011) showed that, besides not being essential, an agent is also not necessarily sufficient. Here, it was shown that religious participants experiencing low control displayed a clear preference for Conway-Morris' theory of evolution over Darwin's version. In other words, they were motivated to perceive order within the context of evolutionary theory. Importantly however, this threat-induced preference shift was only observed when participants first read a text describing God as a passive, non-intervening entity (i.e., an agent that does not provide order).

When participants first read a text in which God was described as an active, intervening power (i.e., an agent that provides order; see Kay et al., 2008, for a similar manipulation) the threat-induced preference shift toward the orderly perspective on evolution disappeared. This study thus provided further support for the idea that, in the context of control-threat, the order motive supersedes the motive to perceive an agent per se.

The three studies that comprise Chapter 2 followed up on these findings by showing that control-threat can motivate people to seek order in a domain different from religious or sociopolitical belief systems, and one where the concept of an agent is irrelevant: scientific theorization. Here, the aim was to show that control-threat makes certain scientific theories more attractive than others. More specifically, I obtained evidence for the idea (suggested by Shermer, 2008) that stage theories are often found to be more appealing than non-stage theories, because they impose order on chaos and provide predictability over uncertainty. In three studies, I showed that a) control-threat increased preference for a stage theory over a non-stage alternative, and b) this effect also held for negative stages, so that threat prompted participants to prefer certain decline over an uncertain but more hopeful alternative. In other words, the motivation to regulate threat seems powerful enough to override people's preference for more positively (but less certain) outcomes. Finally, I found that c) the motivation to imbue stimuli with order, as measured by an illusory pattern perception task, mediated the effect of control-threat on theory preference. Thus, control-threat triggered the motivation to impose order, and this resulted in a clear preference for scientific theories that provide in this need.

Chapter 2 thus further attests to the idea that compensation for threat can occur outside of the realm of religious conviction and political system bolstering, and need not involve an external agent. Chapters 3 and 4 focus on the compensatory control function of belief in progress. In the research described in Chapter 3, I found that control-threat led to an increased motivation to believe in the progress of science, humanity, and society. Again, we are not dealing with bolstering belief in religious or sociopolitical systems of control, neither with an explicit external agent that people can put their faith in. Rather, belief in progress encompasses the rather abstract and future-oriented faith that the course of human history follows an upward trend. I hypothesized that belief in progress has a compensatory control function, because it harbors the promise of future control over the environment and the world (Gray, 2004; Russell, 1929), and because it offers a view on the course of history as orderly, inevitable, and to a certain extent predictable (Bury, 1955). The similarities with religious belief (Gray, 2007) provide a third incentive to expect a compensatory control function of belief in progress. In four studies, I indeed found that control-threat leads to the motivation to defend the concept of progress, to invest in progress-related research areas, and to prefer progressive solutions to an environmental problem. Moreover, in a “field” study in which airplane passengers were asked to rate their perceptions of personal control and to indicate their belief in progress, I found that flying decreased perceptions of control, which in turn led to an increased belief in progress. Participants in a neutral setting reported higher levels of control and a lower belief in progress.

In Chapter 4, I built on the findings of Chapter 3 and obtained direct evidence for the idea that belief in progress actually helps to restore

perceptions of order. Here, belief in scientific progress was manipulated rather than measured as a dependent variable. Results of four studies confirmed the order-restoring qualities of belief in progress: a scientific progress affirmation led to enhanced feelings of order and consequentially to lowered motivations to take matters into one's own hand (i.e., to exert personal control). Questioning the notion of scientific progress however led to elevated perceptions of randomness, which in turn triggered the motivation to exert personal control (taking matters into one's own hand). Indeed, the final experiment in this chapter (Study 4.4) showed that offering an alternative means to affirm personal control cancelled out this motivational effect.

### **Part III: The effects of existential threat**

The last two chapters of this dissertation focused on the existential function of belief in progress. In this research, I drew on terror management theory (TMT; Greenberg, Solomon, & Pyszczynski, 1997; Pyszczynski, Solomon, & Greenberg, 1999), an influential theory that states that mortality awareness has a profound impact on people's day to day psychological functioning. To keep death thoughts at bay, human beings have developed a psychological buffer system that consists of a) sustaining faith in cultural worldviews and b) attaining self-esteem by living up to the standards of value that those worldviews provide. Such worldviews are described as symbolic and socially constructed beliefs that provide people with the notion that they are part of something meaningful and more enduring than their own physical existence. The research in Chapters 5 and 6 of this dissertation tested whether belief in progress can provide such an existential buffer. Adopting a TMT perspective, the aim of this research was to obtain empirical evidence for the ideas of Gray (2004, 2007), who argued that faith in progress provides a secular shield

against humanity's fear of death. In his view, belief in progress has pervaded modern Western society as an existential alternative to religious belief. Chapter 5 put these ideas to the test for the first time. Results of three studies showed that belief in progress has an existential function: mortality salience increased the tendency to defend the notion of progress, questioning the reality of progress increased death-thought accessibility, and affirming the idea of progress served as an anxiety-buffer, cancelling out the effects of mortality salience on the otherwise observed worldview defense tendencies.

Chapter 6 built on and extended these findings. Here, the aim was to illuminate what it exactly is about the concept of progress that helps to assuage existential anxieties. In other words, what are the meaning-providing aspects of belief in progress? To address this question, I looked more closely at different types of progress. Broadly speaking, it can be argued that a distinction can be made between believing in the possibility of material advances (i.e., scientific and technological progress; *things* will improve) and believing in an advancing humanity (i.e., moral progress; *we* will improve). The central tenet of Chapter 6 was that merely believing in technological progress does not imbue the world with meaning. Rather, in order for progress to be existentially meaningful, it has to concern ourselves. Thus, I hypothesized that belief in moral progress would have an existential function, whereas belief in technological progress would not. Indeed, results showed that challenging the notion of moral progress increased the accessibility of death-related cognitions (Study 6.1), whereas challenging technological progress did not. Study 6.2 relied on a representative sample of the Dutch population, and showed that mortality salience increases belief in moral, but not technological, progress. Moreover, this effect was moderated by religiosity,

so that only secular participants bolstered belief in moral progress. This finding attests to the ideas of Gray (2004, 2007), who argued that belief in progress functions as a secular existential substitute for religious belief.

### **Different motivations and multifunctional belief systems**

This dissertation addresses two fundamental human needs, and discusses how threat affects beliefs and preferences that are aimed at meeting these needs. More specifically, I showed that in the context of control-threat, the primary motive is to affirm perceptions of order. When existential anxiety comes into play, people are motivated to affirm meaning in life. The added value of the current research is that it indicates that threat compensation can be derived from more diverse belief systems than previously assumed. As indicated in the introduction of this dissertation, previous research tended to focus on religious beliefs, as well as sociopolitical and cultural worldviews, as important sources of order and existential meaning. The current research shows that order affirmation can also be found in the context of evolutionary theory, scientific theories, as well as belief in moral and scientific progress. Chapter 2 also yielded evidence for the underlying motivational mechanism (motivated perception of order) and showed that order motivation supersedes valence of expected outcomes. Chapter 4 provided direct evidence for the fact that affirming such a belief system (i.e., belief in scientific progress) actually helps to enhance order perceptions.

Belief in moral progress was also shown to harbor an existential function; Chapters 5 and 6 describe 5 studies showing that existential threat led participants to bolster this belief, and it was shown (in Study 5.3) that affirming belief in progress mitigated the impact of existential threat on the accessibility of death-related thoughts and subsequent worldview defense

tendencies. Study 5.3 thus provides quite direct evidence for the compensatory qualities of believing in progress. This research is to my knowledge the first to provide evidence for progressive faith as an existential anxiety-buffer, and it is interesting to observe that existential threat can be mitigated by a belief system that diverges from the prevailing cultural and religious worldview defense effects documented in this field of research. A recent review paper documents how TMT-related research lately tends to obtain more evidence for such ‘positive’ and less defensive effects of existential threat, although it is noticeable that these effects often seem to require positive norm salience manipulations to actually take effect (so that a salient positive norm combined with a mortality salience manipulation produces positive outcomes; see Vail et al., in press). Nonetheless, the bulk of over 25 years of TMT-research seems to document deleterious, defensive, and generally negative responses to existential threat (Greenberg, Solomon, & Arndt, 2008).

**Unity versus specificity.** The similarities and differences between the fundamental needs for control and existential meaning have been discussed throughout this dissertation, particularly in the introduction. As I illustrated there, I started out from the assumption that these motivations are distinct yet partially overlapping. Although thinking about mortality might lead the person to feel that (s)he has no control over the ultimate inevitability, and perceptions of randomness might trigger death-related thoughts, my argument is that affirming one motivation does not necessarily mitigate a threat to the other (see Rutjens & Loseman, 2010; Shepherd, Kay, Landau, & Keefer, 2011); both needs have unique characteristics and pose different compensatory challenges.

However, the fact that certain compensatory belief systems (e.g., religious and sociopolitical beliefs) have been shown to help assuage threats to control as well as existential threats might suggest that these beliefs help to meet one core motive underlying the needs for control and meaning (see Fritsche, Jonas, & Fankhänel, 2008; Greenberg et al., 1997; Heine, Proulx, & Vohs, 2006; McGregor, Nash, Mann, & Phills, 2010). However, it is also feasible - and this is what I would argue - that these belief systems are multidimensional and that specific qualitative aspects of these beliefs help to assuage specific threats (see also Shepherd et al., 2011). Remember that Spilka, Shaver, and Kirkpatrick (1985) contended that religion has multiple psychological functions, amongst which the effectuation of the needs for control and meaning. As I described in the introduction, certain secular convictions, for example related to nationalism and political system defense, have also been shown to harbor both an existential function and a compensatory control function. Moreover, as shown in Chapters 3-6 of this dissertation, belief in progress too functions as compensatory control as well as a buffer against existential threat (I will elaborate on this in the next paragraph). The existential function of religious belief is of course beyond dispute, but its compensatory control function is less straightforward. Kay et al. (2008) and Rutjens et al. (2011) found that the extent to which a deity was framed as either a controlling agent or merely as a creator is an important moderator of its ability to provide compensatory control. In the latter case, the effect of control-threat on religious belief was not observed. This suggests that specific aspects of religious belief have the potential to affirm perceptions of order and provide compensation for low personal control.

My own research on belief in progress provides further suggestive evidence for the idea that certain belief systems can serve multiple psychological functions. In Chapter 3 (Study 3.4), I found that belief in moral as well as technological progress was enhanced as a result of control-threat. In the discussion of Chapter 3, I elaborated on why both types of progress could be expected to harbor a compensatory control function. However, Chapter 6 makes it clear that matters are different in the realm of existential meaning. Here, I provided evidence for the idea that whereas belief in moral progress has an existential function, belief in technological progress has not. The bottom-line of the argument here was that belief in the progress of humanity itself imbues the course of history with meaning, whereas merely observing technological and material advances does not.

To sum up, I would argue that the reason why different threats have been found to lead people to bolster the same belief system lies in the fact that such a belief system provides in more than one psychological need (e.g., Spilka et al., 1985). Moreover, a certain component (e.g., providing order) of a belief system might be particularly suitable as compensation for a specific threat (e.g., low personal control). In the following section, I will speculate on when this distinction might blur, by focusing on the question when order becomes meaningful.

**Imbuing order with meaning.** Merely perceiving order in the world is no guarantee for experiencing life as meaningful. Order can be aimless. So, in what ways might order become meaningful? One way might be to infer purpose and intention behind a certain pattern or structure, in other words, to believe an agent is involved in the orderly process. This idea relates to the distinction between ‘patternicity’ and ‘agenticity’. In the introduction, I

referred to the naturally occurring tendency to impose patterns and structure on our environments (dubbed patternicity by Shermer, 2010) in the context of control-threat. Interestingly, Shermer also coined a second and related term: agenticity. Besides the tendency to impose patterns on what we perceive, human beings are prone to the (often false) detection of (causal) agents in their environments, in other words, they infuse these patterns with purpose and intention (Shermer, 2010; see also Foster & Kokko, 2009). Indeed, the tendency to attribute order in one's environment to an intentional agent - and the difficulty people have to attribute a transition from chaos to order to inanimate objects (i.e., the wind, the sea) - is already strongly present in young children; they find it difficult to associate lifeless objects with increases in order (Newman, Keil, Kuhlmeier, & Wynn, 2010; see also Kelemen & Rosset, 2009). It is feasible that agenticity is one way by which certain belief systems become meaning providers. Indeed, previous research (Morewedge, 2009; see also Wong & Weiner, 1981) has shown that people are especially likely to attribute events to an external agent if the event is negative (negative events harbor of course, more so than neutral or positive events, potential meaning-threats). In the context of Intelligent Design versus Conway-Morris's orderly perspective on the process of evolution (Chapter 1), I would suspect that merely affirming order in evolution is not a guarantee for meaning. However, like religious belief in general, believing in Intelligent Design might have multiple psychological functions. Indeed, Tracy, Hart, and Martens (2010) showed effects (similar to those described in Chapter 1 of this dissertation) on the perceived attractiveness and preference for Intelligent Design in the context of existential threat.

Another way to imbue order with meaning might be through fate attribution. If an event or process was ‘meant to happen’, then that event or process might become more meaningful and is therefore no longer aimless (see Kray et al., 2010; Norenzayan & Lee, 2010). Indeed, people often tend to perceive important and unexpected life events as inevitable. (Of course, when believing that an event is predetermined there might also be an agent involved that is responsible for outcomes. Fate and agent attributions will likely often coincide.) Nonetheless, in the context of belief in human progress (Chapters 5 and 6 of this dissertation), there is no agent per se involved. Here, it might well be the case that people infer a sense of fate from the progressing course of human history. This resonates with the ideas posited by Bury (1955), who argued that human progress is a necessary result of human nature (in other words, it is meant to happen), and that belief in such progress is comparable to religious predetermination beliefs (i.e., providence), but without reference to an external agent. Viewing human progress as inevitable might constitute one way in which it becomes meaningful<sup>28</sup>.

### **Future directions**

The research presented in this dissertation aimed to advance understanding of the various ways in which people respond to threats to control and meaning. Although a substantial body of recent research has drastically improved what we know about threat and threat compensation, there are still questions to be answered. What directions might future research take in order to come to an even more full understanding of compensatory responses to control- and

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<sup>28</sup> There are of course more ways in which orderly processes might gain meaning. Obviously, from the perspective of terror management theory, when such a process is intertwined with the notion of symbolic immortality it becomes a meaning providing construct. Also, depending on certain personality characteristics (e.g., need for structure), order in itself could perhaps be a source of meaning in life (see, e.g., Vess, Routledge, Landau, & Arndt, 2009).

meaning threats? I would argue that there are two related aspects of this area of inquiry that deserve more attention: the process that underlies the relation between the experience of threat and the compensation that follows, and, most importantly, the functional value and regulatory benefits of compensatory beliefs and perceptions.

Thus far, there is relatively little known about the affective undertone of control- and (existential) meaning threats. In the domain of control-threat, the majority of research does not report direct effects on affective measures (e.g., Fritsche et al., 2008; Kay et al., 2008), although some research reports suggestive evidence that a threat to control does not so much increase negative affect, but rather attenuates positive affect (Walker & Sorrentino, 2000). There is also research showing that threat (in this case a threat to feelings of power) disrupts executive functioning, but this finding is not driven by differences in affect (Smith, Jostmann, Galinsky, & van Dijk, 2008). However, there is evidence suggesting that control-threat leads to feelings of ‘anxious uncertainty’ (Kay, Gaucher, McGregor, & Nash, 2010; see also Kay, Moscovitch, & Laurin 2010; Proulx & Heine, 2008), although this evidence is indirect. In recent research, I aimed to further explore this issue by focusing on physiological responses to control-threat (Rutjens, van Harreveld, & van der Pligt, 2011). Results indicate that control-threat indeed dampens positive arousal (rather than facilitating negative arousal), a finding that was corroborated by self-report measures of affect. This finding seems to fit with seminal ideas on control-threat and learned helplessness, passivity, and withdrawal (Maier & Seligman, 1976; Rothbaum et al., 1982). In the domain of existential threat, insight into the precise affective underpinnings of the relation between threat and compensation is similarly unclear. Although there

exists an extensive model describing the cognitive architecture of terror management processes (Arndt, Cook, & Routledge, 2004), because these processes occur largely outside of conscious awareness, there is little known about possible affective states or discrete emotions involved in the process of threat and compensation. Possibly, this lack of clarity can be traced all the way back to the fear versus anxiety distinction posed by Heidegger (1927): the more abstract feelings of anxiety ('Angst') that mortality salience may elicit are arguably more difficult to tap into than the concrete emotion of fear ('Furcht'). Fortunately, there have recently been first endeavors to illuminate the neurological underpinnings of uncertainty threat (McGregor et al., 2010) and existential threat (Quirin et al., 2011), where both lines of research suggest that threat is associated with defensive motivation and amygdala activation (indicating threat-related arousal).

A related point of attention pertains to the functional value and regulatory benefits of threat *compensation*. To what extent do threat compensation beliefs actually *help* to cope with the threat that triggered them? To my knowledge, in the domain of control-threat and order motivation, no research thus far has provided direct evidence for the question to what extent, and how, compensation mitigates the experience of psychological threat. For example, does an elevated belief in a controlling God actually make the threatened individual feel better? This is unclear; we do not know if threat compensation restores the affective status quo (i.e., how the person felt before control was threatened) or reduces possible feelings of anxiety. Importantly, we also do not know if threat compensation should indeed be seen as compensation (so that the threat remains but the individual is somehow better equipped to cope with it) or as actual regulation (so that the threat is

effectively removed). This relates to the distinction between fear control and danger control that is made in research on fear-arousal, in which the former resembles compensation and the latter resembled actual regulation of the threat (Ruiter, Abraham, & Kok, 2001). The compensatory control model (Kay et al., 2008) would predict that compensatory religious beliefs restore perceptions of order (which are threatened by lowered personal control), but that personal control remains low. As far as I know, the research described in Chapter 4 of this dissertation is the first to provide partial evidence for this idea. Here, it was shown that affirming belief in scientific progress enhances perceptions of order but not perceptions of personal control. However, future research should test a more complete model of threat compensation, in which a) personal control is threatened, b) perceptions of personal control and order are measured, c) compensation is provided, d) perceptions of personal control and order are measured again. Pertaining to the previous paragraph, adding measures of affect and arousal to b) and d) would further complete the picture.

In relation to existential threat, insight into the regulatory process and functional value of compensation is more advanced. Over the years, TMT has advanced a dual-defense model that captures the process of managing threat. For example, affirming a meaning-providing worldview eliminates the effects of mortality salience on the accessibility of death-related cognitions (Arndt et al., 2004; see also Chapter 5 of this dissertation). Thus, here we know that threat compensation actually helps to reduce the threat. Nonetheless, a lowered accessibility of death-related thoughts does not imply that perceptions of meaning in life are effectively restored. Therefore, in this domain too, a more complete understanding of the process might entail that we learn more about the extent to which existential anxiety heightens feelings

of anxiety ('Angst') and lowers perceptions of meaning in life, and whether bolstering a meaning-providing worldview restores the status quo (i.e., anxiety is removed, perceptions of meaning are restored).

Finally, advancing insight into the process of threat compensation might also aid to our understanding of the similarities and differences between threats to control and meaning. As discussed in the previous section, views on the degree to which these threats and the underlying needs diverge tend to differ. Such insight might also help to predict how people respond to an event that arguably constitutes a threat to control and existential meaning (e.g., a terrorist attack). Are they primarily motivated to restore perceptions of order, or are they actively pursuing ways to restore meaning? Future research should help to advance knowledge of the possibilities as well as the limitations of different motivations and multifunctional belief systems.

### **Conclusion**

We are sense-making creatures in a world that can sometimes appear random, haphazard, uncontrollable, and void of meaning. This dissertation focused on how people start making sense when their environment temporarily stops making sense. When our perceptions of control are threatened or when we are bothered by existential doubts, we actively pursue ways to compensate for these threats. The present dissertation illuminates some of these ways and shows that we are not restricted to God and country to find order and meaning in life.