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

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Summary

The need for control and the need for meaning are fundamental to well-being; people are sense-making creatures and are highly motivated to infer order, predictability, and meaning from the things they perceive in the world and the events that happen in their lives. However, the world does not always make sense. It is inevitable that we every now and then are faced with feelings of low control and reminders of our fragile nature. The current dissertation focused on how people cope with these threatening and sometimes inevitable cognitions. In six chapters, I investigated how people respond to control- and meaning threats. Building on an extensive body of literature, I looked at the different ways in which these two distinct but partially overlapping threats affect compensatory beliefs and preferences, and at the extent to which these help to regulate or reduce these threats. More specifically, my goal in the current dissertation was to examine the effects of control-threat and existential threat on secular, scientific, and religious belief systems.

The effects of control-threat

The first four chapters of my dissertation focused on compensatory responses to control-threat. The theoretical basis of these chapters was formed by the compensatory control model (Kay et al., 2008, 2010). This model proposes that perceptions of personal control and compensatory control (i.e., putting faith in an external agent or system that exerts control, e.g., a controlling deity, a strong and benevolent political system, or a powerful ingroup) function in a hydraulic fashion in order to meet the primary motivation that is proposed to underlie the need for control: perceiving order in the world. In other words, the model argues that the need for personal control is part of a more inclusive

motivation. In order to sufficiently perceive order in the world and prevent perceptions of randomness, personal control and compensatory control can both be employed in a substitutable manner. Thus, if personal control is temporarily lowered, people may bolster their belief in a controlling God or a powerful government in order to ascertain themselves that things are under control and, therefore, that the world is an orderly place.

Chapters 1 to 4 built on and extended the compensatory control literature. Based on the assumption that perceiving order is the primary motivation behind compensatory responses to control-threats, I generally tested two related ideas. First, I aimed to obtain evidence for the idea that an agent or external system in the process of coping with control-threat is optional but not essential: order affirmations that do not explicitly involve an agent should also suffice. There should be no inherent preference for order provided by an agent over and above order not provided by an agent. A second and related idea was that order affirmations can be derived from a more diverse array of belief systems than has thus far been tested (extending beyond the domain of religious and sociopolitical beliefs), for example from scientific theories that impose adequate levels of order on reality and from relatively abstract societal beliefs.

Chapter 1 investigated the effects of control-threat on preference for different theories about the origin of life. Control-threat reduced preference for Darwin's Theory of Evolution and resulted in a relative preference for theories of life that thwart randomness, either by stressing the role of a controlling God (Intelligent Design) or by presenting evolutionary theory in terms of predictable and orderly processes. Moreover, the increased preference for Intelligent Design over evolutionary theory disappeared when

the latter was framed in terms of an orderly process with inevitable outcomes. Thus, among a relatively secular sample of participants, control-threat enhanced preference for a religious view on the origin of life, but only in the absence of an alternative option that provides an orderly view on the origin and evolution of life.

Chapter 2 followed up on these findings by showing that control-threat leads to the motivation to find order in a domain different from religious or sociopolitical belief systems, where the concept of an agent is irrelevant: scientific theorization. More specifically, I aimed to show that control-threat alters preferences with regard to different types of scientific theories that aim to explain the same phenomenon (e.g., two theories on moral development). More specifically, in Chapter 2 I obtained evidence for the idea (suggested by Shermer, 2008) that stage theories might be more appealing than non-stage theories, because they impose order on chaos and offer predictability over uncertainty. Indeed, three studies showed that control-threat increases preference for a stage theory over a non-stage alternative, even in the case of a negative succession of stages where threat prompted participants to prefer certain decline over an uncertain but possibly more hopeful alternative. Study 2.3 showed that the motivation to perceive order in the environment, 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, which resulted in a preference for scientific theories that provide an orderly perspective on a certain process or phenomenon.

Chapter 3 focused on the compensatory control function of belief in moral and technological progress. The general assumption was that the belief

that the course of human history follows an upward trend has a compensatory control function, because it harbors the promise of future control over the environment (e.g., Gray, 2004). In Studies 3.1 and 3.2, it was shown that participants lacking control disagreed more with an essay on the illusory nature of human progress. Study 3.3 corroborated these findings in a field study comparing airplane passengers with a control group. Study 3.4 assessed belief in progress more directly and showed an increased willingness to invest in specific fields of progress-oriented research when personal control was low. Moreover, participants lacking control showed an increased preference for high-tech solutions to combat environmental problems and believed more firmly in both scientific and moral progress. The focus in Chapter 4 remained on belief in progress. Here, belief in progress was manipulated rather than measured as a dependent variable, which enabled me to assess whether this belief actually helps to restore perceptions of order in the world. Results confirmed the order-restoring qualities of belief in progress: a scientific progress affirmation led to enhanced perceptions of order and consequentially to a lowered motivation 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.

In sum, Chapters 1 to 4 extended the existing compensatory control literature by showing that control-threat triggers the motivation to affirm order in the context of evolutionary theory, scientific theories, as well as belief in moral and scientific progress. Chapter 2 yielded evidence for an underlying mechanism (the motivated perception of order) and showed that order motivation supersedes valence of the expected outcomes. Chapter 4 provided

direct evidence for the fact that affirming such a compensatory belief system (i.e., belief in scientific progress) enhances order perceptions.

The effects of existential threat

Chapters 5 and 6 focused on compensatory responses to meaning-threats. The theoretical basis of these chapters was formed by terror management theory (TMT; Greenberg, Solomon, & Pyszczynski, 1997; Pyszczynski, Solomon, & Greenberg, 1999). TMT proposes that mortality awareness (i.e., existential threat) has a profound impact on psychological functioning. To regulate mortality-related cognitions, human beings have developed a psychological buffer system that is comprised of symbolic and socially constructed beliefs that provide them with the notion that they are part of something more meaningful and enduring than their own physical existence. Ample research has shown that mortality reminders lead to a search for meaning-providing compensation, such as defending one's worldviews and values. The aim of the research described in the last two chapters of this dissertation was to test whether belief in progress provides such a meaning-providing buffer against existential threat. I derived this hypothesis from Gray (2004, 2007), who argued that belief in progress has pervaded modern society as an existential alternative to religious belief, shielding us from our fear of death.

In Chapter 5, I put this idea to the test. Three studies indeed showed that belief in progress has an existential function: threat increased the tendency to defend the idea of progress (Study 5.1), questioning the idea of progress increased death-related cognitions (Study 5.2), and affirming the idea of progress provided a buffer against the effects of a mortality salience manipulation (Study 5.3). Study 5.3 thus provided direct evidence for the protective value of belief in progress as a compensatory belief system when

facing existential threat. Chapter 6 built on and extended these findings, by showing that for belief in progress to protect against mortality concerns it should primarily concern moral progress (*we* will improve) as opposed to technological progress (*things* will improve). I argued that belief in moral progress, like religious belief, requires faith and imbues the course of human history with purpose and significance. Technological progress in itself does not, and thus I expected that the latter would be insufficient. Results of Study 6.1 indeed showed that challenging moral but not technological progress increases death-thought accessibility. I also tested the hypothesis that this effect should primarily be observed among secular participants. Study 6.2, which employed a representative sample of the Dutch population, indicated that mortality salience enhances belief in moral but not technological progress, and showed that this effect was indeed moderated by religious belief, so that only secular participants bolstered belief in moral progress as a response to existential threat.

Conclusion

The current dissertation addressed two fundamental human needs, control and meaning, and assessed how threats to these needs affect compensatory beliefs and preferences. In the case of control-threat, people seek to restore perceptions of order. When people experience existential threat, they are motivated to affirm perceptions of meaning (in the present research by bolstering belief in human progress). In the Introduction and General Discussion of my dissertation, I elaborated on the differences and similarities between these two types of threat, arguing that they partially overlap but have distinct and unique characteristics as well. In the General Discussion, I argued that this also applies to the compensatory belief systems that people affirm as

a response to threat – many of these beliefs and preferences (such as religious belief and belief in progress) can be described as multidimensional and are comprised of different aspects that help to assuage specific threats. Put differently, they can serve multiple psychological functions. I ended the General Discussion by speculating on when the distinction between threat-specific compensatory components might blur. Finally, I provided a number of suggestions for future research to further our understanding of threat compensation.

To conclude, this dissertation focused on how people make sense of a world that can appear random, uncontrollable, and meaningless. To cope with such threatening perceptions, people actively pursue compensation by drawing from secular, scientific, and religious belief systems that help to restore order and meaning in life.