

Research Article

Distinct threats, common remedies: How consumers cope with psychological threat

DaHee Han ^{a,*}, Adam Duhachek ^b, Derek D. Rucker ^c

^a Desautels Faculty of Management, McGill University, 1001 Sherbrooke Street West, Montreal, Quebec H3A 1G5, Canada

^b Kelley School of Business, Indiana University, 1309 East 10th Street, Bloomington, IN 47405, USA

^c Kellogg School of Management, Northwestern University, 2001 Sheridan Road, Evanston, IL 60208, USA

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Abstract

Research has consistently demonstrated that psychological threats to the self have a wide variety of consequences for consumer behavior. The present research introduces a novel perspective to this topic by proposing that psychologically distinct domains of threat have a common underpinning in the coping strategies they evoke. Specifically, this paper presents the argument that distinct domains of threat can be linked to either approach motivations that foster more problem-focused coping or avoidance motivations that foster more emotion-focused coping. Multiple experiments offer systematic support for these propositions. Implications for both the psychological self-threat literature and the coping literature are discussed.

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Introduction

Consumers encounter diverse threats to the self that range from challenges to, or deficits in, one's intelligence, personal control, need for social inclusion, and mortality. One consequence of these distinct forms of psychological threat is that each has the potential to direct consumption towards products that signal success on the threatened aspect of the self. Consider the following examples. When consumers' intelligence was threatened they selected products that signaled intelligence (Gao, Wheeler, & Shiv, 2009). Consumers whose sense of personal control was threatened expressed a greater preference for products with clear boundaries (Cutright, 2012).

Consumers who felt rejected were willing to pay more for items that built social connections (Mead, Baumeister, Stillman, Rawn, & Vohs, 2011). And, when consumers' mortality was threatened, they responded more favorably to status brands that signaled their relative worth to society as a whole (Mandel & Heine, 1999).

Collectively, such "compensatory consumption" behaviors can be understood based on the proposition that products and brands provide and signal information about the self (Belk, 1988; Shavitt, Torelli, & Wong, 2009). Individuals' intelligence, for example, is not represented solely by scholastic achievements, but by the products and brands that people associate with. Because of the relationship between products and the self, consumers can assuage a threatened perception of the self by acquiring products that signal that one possesses a desired self-identity. Indeed, this logic is a core tenet of symbolic-self completion theory, which acknowledges that the brands and products consumers acquire and display can complete a threatened part of the self (Wicklund & Gollwitzer, 1982; for recent reviews

* Corresponding author at: 1001 Sherbrooke Street West, Montreal, Quebec H3A 1G5, Canada. Fax: +1 514 398 3876.

E-mail addresses: dahee.han@mcgill.ca (D. Han), aduhache@indiana.edu (A. Duhachek), d-rucker@kellogg.northwestern.edu (D.D. Rucker).

see Lee & Shrum, 2013; Rucker & Galinsky, 2013). Wicklund and Gollwitzer (1982) brought this perspective to life when they found that MBA students who lacked objective markers of success (e.g., high grades, multiple job offers) were more likely to possess symbolic representations of success (e.g., expensive watches and briefcases).

As alluded to in the opening paragraph, a common approach to studying compensatory consumption is to focus on a particular threat and link it to a specific compensatory response (see Galinsky, Whitson, Huang, & Rucker, 2012). For example, Mandel and Heine (1999) examined how a threat to one's mortality specifically affected status consumption. This threat-specific approach has produced a better understanding of how different domains of threat (e.g., intelligence, mortality, personal control, social rejection) operate and influence consumers' reactions to specific brands or product features. However, with individual efforts emphasizing how consumers respond to a specific domain of threat in isolation, possible commonalities among distinct threats have received less attention (c.f. Heine, Proulx, & Vohs, 2006).

In the present paper, we put forth a new perspective on self-threats. We propose that distinct domains of threat might share a commonality in the type of coping strategies they evoke. The foundation for this argument rests in the idea that self-threats can activate more general motivations with regard to either approach or avoidance that, in turn, have implications for the coping strategies people utilize. Although consumers might often prefer products that alleviate a specific aspect of the threatened self, we introduce the hypothesis that commonalities in coping strategies may affect general preferences across different threats. As a consequence, this conceptualization contributes to broadening our understanding of psychological threat by emphasizing similarities among distinct threats whereas extant research has focused primarily on studying individual threats in isolation.

Literature review: threat, motivation, and coping

In this section we review the threat, motivation, and coping literatures. To date, these three literatures have progressed largely in isolation from one another. In the course of our theory building, we identify commonalities across these literatures that serve as a base for a framework that integrates these literatures at a new theoretical level of abstraction.

Psychological threat to the self

We define the experience of psychological threat as an uncomfortable and aversive state that results from an actual or perceived discrepancy between one's current state and an end state (Kim & Rucker, 2012; Lazarus & Folkman, 1984). Our definition dovetails with that of self-discrepancy theory (SDT; Higgins, 1987), which posits that self-threats arise from discrepancies between actual–ought or actual–ideal selves. SDT further suggests that the nature of the discrepancy can produce distinct emotional outcomes (Higgins, 1999). Actual–ought based inconsistencies can lead to more agitation-related

emotions (e.g., anxiety), whereas actual–ideal based inconsistencies can lead to more dejection-related emotions (e.g., sadness).

In the present research, we embrace the general idea that self-threats arise from discrepancies. However, unlike SDT our interest is not in contrasting actual–ought and actual–ideal discrepancies. Rather, we are interested in how distinct domains of self-threat (e.g., intelligence, mortality, personal control, social rejection) produce similar versus dissimilar approaches to resolving self-discrepancies. An individual may experience an actual–ought threat to his intelligence (e.g., *I ought to* have done better on that math test), personal control (e.g., *I ought to* have had more control in that situation), mortality (e.g., *I ought to* accomplish more before I die), or social rejection (e.g., *I ought to* have more social connections). All of these reflect actual–ought discrepancies, and thus might elicit similar emotional reactions according to SDT. Our interest is whether these distinct domains of threat elicit similar or dissimilar coping responses, not based on whether the discrepancy is ideal or ought based, but based on potential differences in the motivations they activate. We present the idea that different domains of threat may activate distinct motivations—approach and avoidance—that have implications for subsequent coping behavior.

Approach and avoidance motivations

Research on motivation suggests that people have two distinct motivational systems that govern behavior: approach and avoidance (e.g., Carver & White, 1994; Gray, 1982, 1990; Higgins, 1997). The approach motivational system—also referred to as the behavioral activation system (Carver & White, 1994)—is posited to regulate behavior associated with positive outcomes, such as success, rewards, and achievement. Carver and Scheier (1981, 1990) suggest that the approach motivational system activates when individuals have a desired end-state accompanied by a focus on pursuing positive outcomes. For example, an individual with an approach orientation towards studying for an exam is likely to be more inclined to focus on the positive outcome of obtaining an A. Individuals with approach motivations are sensitive to, and focused on, bringing about positive outcomes (Carver & White, 1994; Higgins, 2000).

In contrast to the approach system, the avoidance system—also called the behavioral inhibition system (Carver & White, 1994)—restrains behavior that may lead to negative outcomes such as failure and punishments. Carver and Scheier (1981, 1990) suggest that the avoidance motivational system activates when individuals focus on an undesired end-state (i.e., a negative value or outcome). Thus, individuals with avoidance motivations are sensitive to and emphasize circumventing negative outcomes (Carver & White, 1994; Higgins, 2000). For example, an individual with an avoidance orientation towards studying for an exam is likely to be more inclined to focus on the negative consequences of receiving an F.

We suggest that approach and avoidance motivations serve as a foundation for exploring unexamined commonalities across distinct domains of threat. Where prior research has not associated distinct domains of threat with approach or avoidance motivations, we propose that different domains of threat can be conceptually and empirically linked to either an approach or avoidance orientation. Moreover, we propose that an important consequence of these orientations is that they can be used to understand commonalities in coping behavior elicited by distinct domains of threat.

Consumer coping strategies

Coping refers to cognitive or behavioral efforts to reduce stress (see Duhachek, 2008, for a review). The coping literature reveals that people can respond to stress using either problem-focused or emotion-focused coping. Problem-focused coping is defined by efforts to change the cause of stress (Lazarus & Folkman, 1984), whereas emotion-focused coping is defined by efforts to regulate one's emotional responses to the sources of stress (Lazarus & Folkman, 1984). For example, problem-focused coping entails actions that emphasize the cause of the threat such as thinking about how to improve a situation produced by the threat, changing behavior to obtain a better outcome, planning actions regarding how to handle the source of the stress, and examining various options related to the cause of the threat. In contrast, emotion-focused coping involves efforts to address the emotional cost of the threat such as avoiding thinking about a stressful situation, reinterpreting the threat to reduce its stressful impact, or to directly regulate the emotions resulting from a threat (e.g., trying to calm oneself down). In short, problem-focused coping is directed at managing the source of the threat, while emotion-focused coping is aimed at regulating emotional responses to the threat (Duhachek & Iacobucci, 2005).

The coping literature (e.g., Lazarus & Folkman, 1984) suggests that consumers' choice between these two coping strategies can be affected by factors such as how they appraise the stressful situation and how they evaluate their ability to manage stress. For example, threatened consumers who believe they possess the ability to alleviate a threat engage in problem-focused coping strategies whereas consumers lacking this belief instead attempt to regulate their emotional response via emotion-focused coping (Sujan, Sujan, Bettman, & Verhallen, 1999). Duhachek, Agrawal, and Han (2012) demonstrated that two specific threats, namely shame and guilt, link to emotion-focused and problem-focused coping respectively. Shame leads consumers to be more emotion-focused in their coping, whereas guilt leads them to be more problem-focused in their coping.

Integrating the coping and motivation literatures: how consumers cope with threat

We propose that the literatures on threat, motivation, and coping can be integrated to predict how common coping strategies may operate across distinct domains of threat. Our

perspective begins with the proposition that some threats activate approach motivations whereas other threats foster avoidance motivations. We build this idea off the notion that through exposure to various threats consumers acquire, or are taught, lay theories as to whether a given threat should be thought of in a more approach or avoidance oriented manner. As such, when threats are encountered these lay theories can activate the corresponding motivation. We subsequently introduce and develop the hypothesis that approach motivations direct consumers towards problem-focused coping, whereas avoidance motivations lead consumers to endorse emotion-focused coping. The key implication of this reasoning is that psychologically distinct threats can produce either similar or dissimilar outcomes based on whether they elicit a shared coping strategy. Support for our thesis requires the documentation of three premises. The first premise is that some threats activate approach motivations, whereas other threats activate avoidance motivations. The second premise is that approach motivations have a greater propensity to evoke problem-focused coping. The third premise is that avoidance motivations evoke emotion-focused coping. Next, we review the rationale and evidence for each premise.

Premise 1: distinct threats can activate either approach or avoidance motivations

Our first premise is that different threats can give rise to either approach or avoidance motivations. Several observations provide evidence for a potential link between threat and distinct motivations. Threats might evoke approach motivations when they focus the individual towards attaining positive outcomes (Carver & Scheier, 1981, 1990). For example, approach motivations might arise when individuals believe they possess the ability to attain their desired state or that environmental conditions are favorable for taking action (Duhachek et al., 2012). Individuals may also be approach oriented when they possess the belief that the appropriate way to resolve a threat is to aggressively approach a more desirable end state. Consistent with the idea that some threats might induce approach orientations, individuals experiencing an intelligence threat were motivated to proactively defend against this threat by seeking threat-related products to symbolically protect their self-view (Kim & Rucker, 2012). Likewise, past research found that when individuals' concerns about their mortality were salient they indicated greater fitness intentions (Arndt, Schimel, & Goldenberg, 2003), compatible with an approach motivation focused on becoming healthier. This work also suggests that intelligence and mortality salience are candidates for threats that may naturally be inclined to induce approach motivations.

Other threats may induce an avoidance motivation. For instance, some threats may lead the individual to conclude no potential approach behavior is available to overcome the threat, which may produce avoidance behavior to mitigate the threat. In addition, some threats may be cloaked by uncertainty regarding the best action and this may motivate people to avoid potential negative outcomes associated with the threat. Or,

individuals may possess lay theories that the appropriate way to resolve a threat is through avoidance-related actions. For example, personal control threats might produce an impulse towards avoidance based on the belief that any actions one might take would not produce the desired end state. Consistent with this idea, Mick and Fournier (1998) observed that individuals who felt they could not control new technologies responded by distancing themselves from technology-based possessions. Similarly, individuals who felt socially rejected showed greater withdrawal from social contact (Molden, Lucas, Gardner, Dean, & Knowles, 2009; Twenge, Catanese, & Baumeister, 2002), suggesting avoidance motivations. This past work suggests that personal control and social rejection threats appear to be plausible candidates for inciting more avoidance-oriented responses.

Why might some threats activate an approach motivation (e.g., intelligence and mortality) and others activate an avoidance motivation (e.g., personal control and social rejection)? One explanation for such associations is that people learn to construe certain threats in approach- versus avoidance-oriented fashion. Prior literature on observational learning (Bandura, 1986; Rosenthal & Zimmerman, 1978) and lay theories (Piaget & Garcia, 1989) both suggest that individuals extract underlying rules from different events and integrate these rules to regulate their behavior and motivations. Lay theories can be understood as heuristics or ideas about how people should think or act in a situation or in response to an event. Prior work has suggested that people hold lay theories on a variety of domains (e.g., intelligence and morality (Dweck, 1999; Dweck, Chiu, & Hong, 1995), prejudice (Neel & Shapiro, 2012), etc.) to help them interpret and predict their social world. For example, prior research demonstrates that people have lay theories on the malleability of the self (i.e., entity and incremental) that predict unique motivational patterns and responses to failure (e.g., Beer, 2002; Dweck et al., 1995; Levy, Plaks, Hong, Chiu, & Dweck, 2001). We propose that through observational learning people may come to associate distinct threats with different lay theories of whether to respond to a threat in an approach-oriented versus an avoidance-oriented manner. This does not mean people have or require an understanding of the terms approach and avoidance; rather, through observational learning people might become accustomed to thinking about a threat in what psychologists have identified as a more approach or avoidance oriented fashion.

Anecdotally, in western culture it seems that people often stress performing well in school and actively taking care of one's health. As such, over time individuals may hold the lay theory that people should respond to threats in these domains via attempting to do better or take better care of one's self (i.e., approach), which fits with research findings discussed previously (Arndt et al., 2003; Kim & Rucker, 2012). In contrast, avoiding the loss of personal control and social rejection seem salient motives in western culture. As such, people may associate both of these threats with a more avoidance way of thinking, which fits with research findings discussed previously (Mick & Fournier, 1998; Molden et al.,

2009; Twenge et al., 2002). These theories might accumulate slowly over time and thus influence the specific motivations that are activated in response to distinct threats.

Taken together, our first premise, to be empirically tested, is that particular domains of threat are associated with approach versus avoidance orientations.

H1. Based on different lay theories developed over time, distinct threats might elicit either approach or avoidance motivations. Specifically, threats related to intelligence and mortality will activate approach motivations. In contrast, threats related to loss of personal control and social rejection will activate avoidance motivations.

Premise 2: threats that activate approach motivations lead to problem-focused coping

Our second premise is that threats that prompt the activation of approach motivations lead to problem-focused coping. The basis for this premise begins within the coping literature. The coping literature argues that individuals are likely to engage in problem-focused coping strategies when they perceive opportunity and growth in the stressful situation and focus on the positive benefits associated with adapting to a stressful situation (Lazarus, 1991; Lazarus & Folkman, 1984; Skinner & Brewer, 2002). The characteristics of seeking growth, adaptation, and a focus on positive benefits are consistent with an approach motivation, suggesting a possible link between approach motivation and problem-focused coping. Furthermore, approach motivations result in actions that maximize people's potential for realizing positive outcomes (e.g., Carver & Scheier, 1990; Carver & White, 1994; Higgins, 1997), and an emphasis on maximizing positive outcomes is a correlate of problem-focused coping (Lazarus & Folkman, 1984; Sujan et al., 1999). Taken together, when approach motivations are active, we hypothesize that individuals will be disposed towards problem-focused coping strategies. Formally:

H2. Threats linked to approach motivational orientations will activate greater problem-focused coping.

Premise 3: threats that activate avoidance motivations lead to emotion-focused coping

Our final premise asserts that avoidance motivations lead to emotion-focused coping. Previous research on coping has suggested that individuals are more likely to engage in emotion-focused coping strategies when they perceive potential danger and are focused on the negative consequences of failing to address a stressful situation (Lazarus, 1991; Lazarus & Folkman, 1984; Skinner & Brewer, 2002). In a similar vein, past research on motivation finds that avoidance motivations result in people maximally protecting themselves from incurring losses or vigilantly withdrawing from the stressful situation (e.g., Carver & Scheier, 1990; Carver & White, 1994; Higgins, 1997). Put simply, the behaviors observed from emotion-focused coping and avoidance motivations seem similar in nature. These findings provide initial support for the idea that threats that evoke

avoidance motivation may lead people to endorse emotion-focused coping. Formally, we propose:

H3. Threats linked to avoidance motivational orientations will activate greater emotion-focused coping.

Taken together, our three core premises build new bridges to enhance our understanding of the relationship between different domains of threats and coping strategies. Unlike past efforts that have focused on documenting unique compensatory consequences of a particular domain of threat (i.e., intelligence, mortality, personal control, or social rejection), we carve into the literature the novel proposition that distinct threats that activate the same motivation (e.g., approach: intelligence and mortality) can produce similar outcomes on coping to one another but distinct outcomes compared to threats that activate a different motivation (e.g., avoidance: personal control and social rejection).

Overview of experiments and contribution

We begin with pretests to empirically examine our core assumptions that distinct threats can be associated more with either approach versus avoidance motivations, and that distinct lay theories exist as to how people construe different threats. After the presentation of these pre-tests, three experiments test our focal hypotheses regarding the relationship between distinct threats and preferred coping strategy. Experiment 1 tests our hypothesis that participants who experience threats evoking approach motivations are more likely to endorse problem-focused coping than emotion-focused coping, whereas those who experience threats fostering avoidance motivations are more likely to endorse emotion-focused coping. Experiment 2 demonstrates the mediating role of approach and avoidance motivations in the relationship between distinct threats and coping strategies. Finally, Experiment 3 provides evidence for the proposed role of approach and avoidance motivations using a moderation approach (Spencer, Zanna, & Fong, 2005).

Overall, the current research offers several contributions to the literature. First, we advance the existing consumer threat literature by providing a framework that helps us understand commonalities, as opposed to distinctions, across different domains of threats. By classifying threats based on the motivations they elicit, we provide a novel conceptualization of both threats and consumers' coping responses to threats. We also build upon past research on coping and motivation by establishing unique relationships between two types of coping and approach versus avoidance motivations.

Pretest 1: specific threats and predominant motivational orientations

At present, the empirical evidence for even a core connection between threats and motivations is scant. Consequently, our first pretest examined whether specific domains of threat can elicit approach versus avoidance motivations. We utilized the four different threats previously investigated in consumer behavior where we had predictions as to whether

they would elicit approach or avoidance motivations. As noted previously, prior research indirectly supports the possibility that threats to one's intelligence (Kim & Rucker, 2012) and mortality (Arndt et al., 2003) may activate approach motivations, whereas threats in the form of personal control (Mick & Fournier, 1998) and social rejection (Molden et al., 2009) may activate avoidance motivations.

Procedure

One hundred and fifty-five respondents from an online panel via Mturk participated in the study in exchange for \$1.00 each. Participants were told that they would take part in several unrelated studies that examined how people describe events in daily life and how people think about general issues in life. Using a between-subject design, we randomly assigned 155 respondents to 5 conditions: 4 different threats, and a baseline condition. We also had four additional conditions not focal in this research: a dental pain condition as the control condition for mortality salience, a morality threat condition, an anger threat condition, and a power threat condition. We do not report the dental pain condition here for presentation parsimony, as it is relevant to only one of the four threats. In addition, we have removed discussion of the morality threat, anger, and power threat conditions because they did not yield results central to the present paper. These results can be requested from the authors.

In each condition, participants were asked to complete a writing task designed to evoke a particular self-threat based off manipulations from prior research (see Methodological Details Appendix A for detailed instructions). For example, in the mortality salience condition, participants were asked to write about the following: (1) Please briefly describe the emotions that the thought of your own death arouses in you, (2) jot down as specifically as you can, what you think will happen to you physically as you die and once you are physically dead. In addition, in the baseline condition, participants were asked to recall a particular incident they experienced yesterday. And, they were asked to describe this situation — what happened, how they felt, etc. Subsequently, participants were told the second task was interested in assessing people's agreement and disagreement with a series of items. Participants then completed the Behavioral Inhibition Scale (BIS) and Behavioral Approach Scale (BAS) to assess their motivational orientations related to avoidance and approach, respectively (Carver & White, 1994). Lastly, participants answered demographic questions and questions about the nature of the study. No participants were aware of the core hypothesis or reported that the studies were related.

Results and discussion

Motivations

A mixed ANOVA with threat as a between-subject factor and motivation as a within-subject factor revealed that the effect of motivation was not significant ($F(4, 150) = 1.014, p > .32$). However, a significant 2-way interaction between coping and threat emerged ($F(4, 150) = 17.27, p < .001$).

Participants who received the intelligence threat activated greater approach ($M_{BAS} = 3.04$, $SD = .33$) versus avoidance motivations ($M_{BIS} = 2.77$, $SD = .40$; $F(1, 150) = 4.39$, $p = .038$). Participants whose mortality was threatened activated greater approach ($M_{BAS} = 3.22$, $SD = .30$) versus avoidance motivations ($M_{BIS} = 2.78$, $SD = .66$; $F(1, 150) = 19.02$, $p < .001$). In contrast, participants who felt low personal control activated greater avoidance ($M_{BIS} = 3.17$, $SD = .51$) compared to approach motivations ($M_{BAS} = 2.71$, $SD = .50$; $F(1, 150) = 16.09$, $p < .001$). Similarly, participants who felt socially rejected activated greater avoidance ($M_{BIS} = 3.34$, $SD = .45$) than approach motivations ($M_{BAS} = 2.64$, $SD = .38$; $F(1, 150) = 27.87$, $p < .001$). Finally, in the baseline condition, no difference was found between approach ($M_{BAS} = 2.78$, $SD = .25$) and avoidance motivations ($M_{BIS} = 2.60$, $SD = .53$; $F(1, 150) = 1.79$, $p > .18$).

Baseline comparisons

We also conducted separate ANOVAs to compare each threat against the baseline condition. A 1-way ANOVA indicated that participants who received the intelligence threat activated greater approach motivations ($M_{\text{intelligence threat}} = 3.04$, $SD = .33$) than participants in the baseline condition ($M_{\text{baseline}} = 2.78$, $SD = .25$; $F(4, 150) = 7.12$, $p < .05$). No differences were found between the intelligence threat and the baseline conditions for avoidance motivations ($M_{\text{intelligence threat}} = 2.77$, $SD = .40$, $M_{\text{baseline}} = 2.60$, $SD = .53$; $F(4, 150) = 1.35$, $p > .25$). Participants whose mortality was threatened activated greater approach motivations ($M_{\text{mortality threat}} = 3.22$, $SD = .30$) than those in the baseline condition ($M_{\text{baseline}} = 2.78$, $SD = .25$; $F(4, 150) = 23.73$, $p < .001$), but no difference emerged in avoidance motivations ($M_{\text{mortality threat}} = 2.78$, $SD = .66$, $M_{\text{baseline}} = 2.60$, $SD = .53$; $F(4, 150) = 1.90$, $p > .11$). The personal control threat condition activated greater avoidance motivations ($M_{\text{personal control threat}} = 3.17$, $SD = .51$) than the baseline condition ($M_{\text{baseline}} = 2.60$, $SD = .53$; $F(4, 150) = 16.20$, $p < .05$), but no differences emerged in approach motivations ($M_{\text{personal control threat}} = 2.71$, $SD = .50$, $M_{\text{baseline}} = 2.78$, $SD = .25$; $F(4, 150) = .54$, $p > .71$). Finally, participants who felt socially rejected provoked greater avoidance motivations ($M_{\text{social rejection threat}} = 3.34$, $SD = .45$) than those in the baseline condition ($M_{\text{baseline}} = 2.60$, $SD = .53$; $F(4, 150) = 24.03$, $p < .001$), but no differences were found in the activation of approach motivations ($M_{\text{social rejection threat}} = 2.64$, $SD = .38$, $M_{\text{baseline}} = 2.78$, $SD = .25$; $F(4, 150) = 1.91$, $p > .11$).

Consistent with our inferences from past research, threats to both intelligence and mortality led to greater approach motivation than avoidance motivation. In contrast, threats related to personal control and social rejection led to greater avoidance motivation than approach motivation. Together these results provide support for H1 that distinct domains of threat can activate common motivations.

Pretest 2: lay theories and predominant motivational orientations

Pretest 2 tested the possibility that different threats become tethered to distinct motivational orientations via lay theories.

Again, our proposition is that individuals observe and learn to construe distinct threats in particular ways. As a consequence of such observational learning (Bandura, 1986; Rosenthal & Zimmerman, 1978), people may hold different lay theories as to whether a threat should be addressed in a more approach or avoidance oriented manner.

To test this hypothesis, we examined whether individuals possessed different lay theories about how they had been taught to think about different threats. We also manipulated whether people were under one of the four threats from the first pre-test or not. If people hold ingrained lay theories, then we should observe the presence of the same lay theories about a threat regardless of whether participants are experiencing that threat or not. This test is important because stability would suggest that any measure of lay theory we employ is a stable measure of the lay theory and not merely a proxy for the activation of approach or avoidance orientation. In addition, in pretest 2, we measured distinct emotions to evaluate an alternative explanation that distinct threats may activate discrete emotions that account for the activation of approach or avoidance motivations.

Procedure

Two hundred and three respondents from Mturk were paid \$1.00 for completing the study. Participants were told that they would take part in several unrelated studies that examined how people describe events in daily life and how people think about general issues in life. We randomly assigned 203 respondents to five conditions: 4 different threats, and a baseline condition. The threat manipulations for intelligence, mortality salience, and social rejection and baseline condition were identical to those in pretest 1. For the personal control threat condition, we followed the procedure used by Cutright (2012; see Methodological Details Appendix A for the detailed instructions). Subsequently, participants were asked to indicate the extent to which they agree/disagree with eight statements (counterbalanced) to measure their lay theories related to four distinct threats and two motivations.

The items related to lay theories were constructed to capture how people believed they were taught to think about particular threats. As an example, to assess lay theories of how people were taught to respond to an intelligence threat we asked participants the extent to which they agreed with the statements, "In our culture, when we feel unintelligent, we are often told to avoid thinking about it," (avoidance lay theory) and "In our culture, when we feel unintelligent, we are often told to think about how to gain intelligence (approach lay theory; see Methodological Details Appendix B for complete items)." Participants were then asked to answer a series of questions measuring different emotions (e.g., anger [frustrated, angry, irritated; $\alpha = .91$], sadness [depressed, sad, miserable; $\alpha = .92$], fear [scared, panicky, afraid; $\alpha = .96$], calm [calm, peaceful; $r = .90$], happiness [happy and pleased; $r = .83$] adopted from Richins, 1997; embarrassment [embarrassed, uncomfortable, awkward; $\alpha = .87$] adopted from Modigliani, 1971). Specifically, participants were asked to indicate to what extent they felt the emotion at this moment on a seven point scale (1 = "very slightly or not at all," 7 = "extremely"). Finally, participants completed

demographic questions as well as suspicion probes. No participants were aware of the core hypothesis or reported viewing the threat condition and the lay theories tasks as related.

Results and discussion

We conducted a series of repeated measures ANOVA with threat (intelligence, mortality salience, personal control, social rejection, baseline) as a between-subject factor and lay theory (approach versus avoidance) as a within-subject factor. We conducted a separate analysis for each type of lay theory (i.e., mortality salience lay theories, intelligence lay theories, personal control lay theories, and social rejection lay theories).

For both the intelligence and mortality salience lay theories, no significant interaction between threat and approach versus avoidance lay theories was observed (intelligence threat: $F(4, 198) = .76, p > .55$; mortality salience: $F(4, 198) = 1.18, p > .32$). Only a main effect of lay theory was observed such that participants reported lay theories that were more associated with thinking about how to gain intelligence or gain a healthier life rather than avoiding thinking about the threat. Specifically, differences in approach versus avoidance lay theories were significant for intelligence ($M_{\text{lay_theories_approach}} = 5.16, SD = 1.51, M_{\text{lay_theories_avoidance}} = 3.87, SD = 1.66; F(1, 198) = 62.55, p < .001$) and mortality salience ($M_{\text{lay_theories_approach}} = 5.57, SD = 1.42, M_{\text{lay_theories_avoidance}} = 4.62, SD = 1.51; F(1, 198) = 44.15, p < .001$; see Methodological Details Appendix C for the detailed results).

For lay theories regarding personal control and social rejection threats, a repeated measures ANOVA revealed that the threat by lay theory interactions were not significant (personal control threat: $F(4, 198) = .16, p > .92$; social rejection threat: $F(4, 198) = .23, p > .92$). However, the main effects of lay theory were significant such that participants reported lay theories that both threats were more associated with how to avoid thinking about the threat as opposed to how to approach the threat ($M_{\text{lay_theories_approach}} = 4.47, SD = 1.67, M_{\text{lay_theories_avoidance}} = 5.26, SD = 1.44, F(1, 198) = 22.58, p < .001$) and feeling socially rejected ($M_{\text{lay_theories_approach}} = 4.06, SD = 1.70, M_{\text{lay_theories_avoidance}} = 5.29, SD = 1.45, F(1, 198) = 58.41, p < .001$; see Methodological Details Appendix C for the detailed results).

Finally, we found no evidence that threat had a systematic effect on the distinct emotions activated (p 's $> .50$). This finding suggests that an alternative explanation tied to discrete emotions is untenable.

Together, these findings indicate that individuals appear to hold discrete lay theories for different types of threats. Importantly, these lay theories were unaffected by the type of threat individuals were experiencing, which suggests that they represent stability across threat. If these measures were simply proxies for the activation of approach or avoidance orientations, we should have found significant interactions between our threat manipulation and item endorsement, which we did not.

Experiment 1

Experiment 1 tested the relationship between intelligence, mortality, personal control, and social rejection and the activation of a particular coping strategy (i.e., problem-focused vs. emotion-focused coping). As previously proposed, and suggested by our two pre-tests, threats related to intelligence and mortality, which are associated with an approach orientation, should foster more problem-focused coping. In contrast, threats related to personal control and social rejection, which are associated with an avoidance orientation, should elicit greater emotion-focused coping. To test our hypotheses, we assigned participants to one of four threats. We also included a no-threat baseline condition where participants wrote about their previous day. We then measured participants' tendencies to endorse specific coping strategies.

Procedure

Two hundred and nineteen respondents from Mturk participated in exchange for \$1.00. Participants were randomly assigned to one of five experimental conditions: 1) intelligence threat, 2) mortality threat, 3) personal control threat, 4) social rejection threat, or 5) no-threat baseline. Thirteen subjects failed to complete the study (e.g., they never completed the recall measure or the critical coping dependent measures) and were therefore excluded prior to analyses.

Participants were told that they would participate in several unrelated studies to examine how people describe events in daily life and how people behave in everyday life. First, participants were told that they would be taking part in an event recall study sponsored by the psychology department. Participants were randomly assigned to one of the five recall conditions utilized in the pretests. After the recall task, participants completed manipulation checks (see Appendix A for all items).

Next, measures of each coping strategy were taken. These measures were adopted from Duhachek and Oakley (2007, see Methodological Details Appendix D for all items). Examples of the problem-focused coping items ($\alpha = .88$) read: "I made a plan of action and followed it," "Thought about possible ways to improve the situation," and, "I compromised to get something from the situation." Examples of the emotion-focused coping items ($\alpha = .88$) read: "Withdrew from others," "Took my mind off of the situation," and "I turn to other activities to take my mind off things." Finally, participants responded to some demographic items and questions about the nature of the study. No participants guessed the core hypothesis or reported a relation among the studies.

Results

Manipulation checks

Results indicated that all the threat manipulations were successful in eliciting the intended threat (see Methodological Details Appendix E for details).

Coping strategy

A mixed model ANOVA with threats as a between-participant factor and coping strategy as a within-participant factor, revealed that the effect of coping was not significant ($F(4, 201) = .35, p > .55$). However, the 2-way interaction between coping and threat was significant ($F(4, 201) = 4.94, p < .001$). For participants who received the intelligence threat, the intention to endorse problem-focused coping over emotion-focused coping was greater ($M_{\text{problem-focused}} = 5.92, SD = 1.42, M_{\text{emotion-focused}} = 5.56, SD = 1.34; F(1, 201) = 4.25, p = .041$). For participants whose mortality was threatened, the intention to endorse problem-focused coping over emotion-focused coping was greater ($M_{\text{problem-focused}} = 6.06, SD = 1.41, M_{\text{emotion-focused}} = 5.58, SD = 1.35; F(1, 201) = 6.24, p = .013$). In contrast, for participants who felt low personal control, the intention to endorse emotion-focused coping ($M_{\text{emotion-focused}} = 5.83, SD = .98$) over problem-focused coping was greater ($M_{\text{problem-focused}} = 5.40, SD = 1.06; F(1, 201) = 4.72, p = .031$). Finally, for participants who felt socially rejected, the intention to endorse emotion-focused coping ($M_{\text{emotion-focused}} = 5.75, SD = 1.04$) over problem-focused coping was greater ($M_{\text{problem-focused}} = 5.38, SD = 1.22; F(1, 201) = 3.90, p = .05$).

Baseline comparisons

As an alternative approach to analyze the data, we also conducted separate ANOVAs against the baseline condition for each type of threat. First, participants who received the intelligence threat showed a greater intention to endorse problem-focused coping than those in the baseline condition ($M_{\text{intelligence threat}} = 5.92, SD = 1.42, M_{\text{baseline}} = 5.36, SD = 1.20; F(4, 201) = 4.37, p < .05$). No differences were found between the intelligence threat and the baseline conditions regarding the intention to endorse emotion-focused coping ($M_{\text{intelligence threat}} = 5.56, SD = 1.34, M_{\text{baseline}} = 5.16, SD = .97; F(4, 201) = 2.71, p > .11$). Participants whose mortality was threatened showed a greater intention to endorse problem-focused coping than those in the baseline condition ($M_{\text{mortality threat}} = 6.06, SD = 1.41, M_{\text{baseline}} = 5.36, SD = 1.20; F(4, 201) = 6.27, p < .05$), but there was no difference between the mortality threat and the baseline conditions regarding the intention to endorse emotion-focused coping ($M_{\text{mortality threat}} = 5.58, SD = 1.35, M_{\text{baseline}} = 5.16, SD = .97; F(4, 201) = 2.81, p > .10$). Participants in the personal control threat condition showed a greater intention to endorse emotion-focused coping than those in the baseline condition ($M_{\text{personal control threat}} = 5.83, SD = .98, M_{\text{baseline}} = 5.16, SD = .97; F(4, 201) = 6.91, p < .05$). No difference emerged between the personal control threat and the baseline conditions regarding the intention to endorse problem-focused coping ($M_{\text{personal control threat}} = 5.40, SD = 1.06, M_{\text{baseline}} = 5.36, SD = 1.20; F(4, 201) = .03, p > .86$). Finally, participants who felt socially rejected showed a greater intention to endorse emotion-focused coping than those in the baseline condition ($M_{\text{social rejection threat}} = 5.75, SD = 1.04, M_{\text{baseline}} = 5.16, SD = .97; F(4, 201) = 5.68, p < .05$). No difference was present between the social rejection threat and the baseline conditions regarding the intention to endorse problem-focused

coping ($M_{\text{social rejection threat}} = 5.38, SD = 1.22, M_{\text{baseline}} = 5.36, SD = 1.20; F(4, 201) = .01, p > .93$).

Discussion

Experiment 1 found evidence for the predicted relationships between different domains of threats and distinct coping strategies, supporting both H2 and H3. Threats associated with approach motivations in our pretests, intelligence and mortality threats, led participants to endorse problem-focused coping compared to emotion-focused coping. Conversely, threats associated with avoidance motivations in our pretests, personal control and social rejection threats, led participants to endorse emotion-focused coping compared to problem-focused coping. These findings provide the first tangible evidence supporting the proposed theorizing that *commonality* among threats at the level of motivational orientations can be linked to broader coping strategies.

Experiment 2

Experiment 2 tested the mediating role of approach and avoidance motivations in the relationship between different domains of threat and problem-focused versus emotion-focused coping strategies. If our perspective is correct, then differences in preferences for problem-focused versus emotion-focused coping should be attributable to differences in people's approach versus avoidance motivation. To test this proposition, we assessed both approach and avoidance motivations using the BIS/BAS scales along with participants' preference for problem-focused versus emotion-focused coping strategies.

We designed Experiment 2 to also allow for a test of an alternative mechanism. One might argue that the relationship between our selected threats and coping strategies is due to differences in regulatory focus (Higgins, 1997). Regulatory focus theory posits that promotion focus is associated with strategic eagerness to attain growth and achievement while prevention focus is associated with strategic vigilance to attain safety and security (Higgins, 1997, 2000). Furthermore, this theory suggests that promotion-focused individuals are sensitive to gains (both gains and nongains) whereas prevention-focused individuals are sensitive to losses (both losses and nonlosses; Brendl, Higgins, & Lemm, 1995; Pham & Higgins, 2005). Thus, one might argue that the observed effects on coping strategies are not due to differences in approach versus avoidance orientations but rather differences in promotion versus prevention.

Of course, the constructs of approach and avoidance motivations are distinct from regulatory focus (Higgins, 1997). An approach motivation can be tied to either a promotion focus that emphasizes gains or a prevention focus that emphasizes non-losses. Similarly, an avoidance motivation can produce a promotion focus to avoid non-gains or a prevention focus to avoid losses. Put simply, approach and avoidance motivations can be applied independently towards prevention versus promotion focus means of goal pursuit. The independence of the constructs, however, does not rule out the possibility that our findings are driven more by promotion and prevention focus than by approach

and avoidance motivations. We explored this alternative account by assessing regulatory focus with two scales used in the literature (Higgins et al., 2001; Lockwood, Jordan, & Kunda, 2002).

Procedure

One hundred and seventeen respondents from Mturk participated in exchange for \$.70. Participants were randomly assigned to one of the four threats (intelligence, mortality, personal control, social rejection). The procedure to induce threat utilized the episodic recall task used in the pretest 2 and Experiment 1. Subsequently, participants completed the BIS/BAS scale questionnaire used in the pretest (BAS: $\alpha = .84$; BIS: $\alpha = .83$). In addition, we added two regulatory focus scales (Higgins et al., 2001; Lockwood et al., 2002), and coping measures problem-focused coping ($\alpha = .87$) and emotion-focused coping measures ($\alpha = .87$; Duhachek & Oakley, 2007). Finally, participants completed demographic measures and questions about the nature of the study. No participants guessed the core hypothesis or that the recall manipulations and BIS/BAS scales were related.

Results

Coping strategy

A 2-way mixed ANOVA with threats as a between-subject factor and coping as a within-subject factor was significant ($F(3, 113) = 26.46, p < .001$). Replicating Experiment 1, intentions to endorse problem-focused coping over emotion-focused coping were greater in both the intelligence threat condition ($M_{\text{problem-focused}} = 6.53, SD = 1.55, M_{\text{emotion-focused}} = 5.85, SD = 1.29; F(1, 113) = 10.83, p < .001$) and in the mortality threat condition ($M_{\text{problem-focused}} = 6.62, SD = 1.12, M_{\text{emotion-focused}} = 5.71, SD = .99; F(1, 113) = 15.80, p < .001$). In contrast, intentions to endorse emotion-focused coping over problem-focused coping were greater in the personal control threat condition ($M_{\text{emotion-focused}} = 6.65, SD = 1.07, M_{\text{problem-focused}} = 5.38, SD = .63; F(1, 113) = 32.74, p < .001$) and in the social rejection threat condition ($M_{\text{emotion-focused}} = 6.32, SD = 1.05, M_{\text{problem-focused}} = 5.35, SD = .71; F(1, 113) = 22.72, p < .001$).

Motivations

A 2-way interaction between threats and coping was significant ($F(3, 113) = 11.28, p < .001$). Greater approach motivations were found among participants in the intelligence threat condition ($M_{\text{BAS}} = 3.10, SD = .32, M_{\text{BIS}} = 2.77, SD = .63; F(1, 113) = 6.91, p < .01$) and the mortality threat condition ($M_{\text{BAS}} = 3.17, SD = .45, M_{\text{BIS}} = 2.76, SD = .71; F(1, 113) = 8.23, p < .005$). In contrast, greater avoidance motivations were found among those in the personal control threat condition ($M_{\text{BIS}} = 3.33, SD = .44, M_{\text{BAS}} = 2.87, SD = .49; F(1, 113) = 10.69, p < .001$) and the social rejection condition ($M_{\text{BIS}} = 3.24, SD = .38, M_{\text{BAS}} = 2.88, SD = .49; F(1, 113) = 8.12, p < .005$).

Regulatory focus

The 2-way interaction between threats and regulatory focus was not significant (for the scale by Higgins et al., 2001: $F(3,$

113) = .98, $p > .41$; for the scale by Lockwood et al., 2002: $F(3, 113) = .65, p > .59$; see Table 1 for the detailed results).

Mediation

Given that we found no evidence for differences in regulatory focus, our mediation analyses focused on motivations. Prior to conducting mediation analysis, we ran an exploratory factor analysis (a principal axis factoring with promax rotation) to establish the discriminant validity of the BIS/BAS and coping scales. The results of this analysis revealed that problem-focused coping items and BAS items loaded onto two different factors (factor loadings are greater than .63) and the emotion-focused coping items and BIS items loaded onto two different factors (factor loadings are greater than .37). To conduct a formal test of mediation, we utilized bootstrapping procedures for testing indirect effects as recommended by Shrout and Bolger (2002) and discussed by Preacher, Rucker, and Hayes (2007). This approach involves using bootstrapping procedures to compute a 95% confidence interval around the indirect effect (i.e., the effect of threat on problem-focused coping through BAS; the effect of threat on emotion-focused coping through BIS). A confidence interval that does not include zero deems evidence for an indirect effect. Independent variables were dummy coded (i.e., intelligence and mortality threats = -1, personal control and social rejection threats = 1).

First, we investigated the mediating effects of avoidance motivations on emotion-focused coping. The bootstrapping analysis (Preacher et al., 2007) led to a confidence interval ranging from .12 to .33, providing evidence that avoidance motivations mediated the effect of threat on emotion-focused coping (see Fig. 1 for complete path diagram and regression weights). Next, we examined the mediating effects of approach motivations on problem-focused coping. The results of this analysis revealed a 95% confidence interval ranging from -.12 to -.0003, providing evidence that approach motivations mediated the effect of threat on problem-focused coping (see Fig. 2 for complete path diagram and regression weights). Interestingly, while the results of this mediation model were generally consistent in that the key indirect effect of our manipulation through the BAS on problem-focused coping was significant, the direct effect was not reduced. This suggests

Table 1

Regulatory focus activated by distinct threats in Experiment 2 based on scales provided by Higgins et al. (2001) and Lockwood et al. (2002).

Threats	Higgins et al. (2001)		Lockwood et al. (2002)	
	Promotion ($\alpha = .69$)	Prevention ($\alpha = .85$)	Promotion ($\alpha = .79$)	Prevention ($\alpha = .89$)
Mortality salience	20.92 (4.34)	16.04 (5.33)	5.26 (1.28)	4.03 (1.24)
Intelligence	20.16 (4.03)	17.66 (4.72)	5.09 (1.23)	4.11 (1.11)
Personal control	21.00 (3.81)	17.81 (4.65)	5.33 (1.13)	4.30 (1.06)
Social rejection	19.56 (3.77)	16.06 (4.98)	5.03 (1.07)	4.40 (1.18)

the possibility of a suppressor (Rucker, Preacher, Tormala, & Petty, 2011). This possibility awaits further exploration.

Discussion

Experiment 2 provided further empirical evidence in support of the proposed link between different threats, motivations, and coping strategies. Threats that provoked approach motivations (e.g., intelligence and mortality threats) led to problem-focused coping. In contrast, threats that provoked avoidance motivations (e.g., personal control and social rejection threats) led to emotion-focused coping. In addition, we found that threats did not influence regulatory focus in a systematic way, indicating this was not a viable alternative explanation for our results.

Experiment 3

Experiment 3 was conducted to provide additional evidence of the underlying process by which distinct threats affect motivational orientations by using a moderation approach (see Spencer et al., 2005). To do so, in Experiment 3, we manipulated approach and avoidance motivations directly by adopting methods used in previous research (Kramer & Yoon, 2007; Sen & Block, 2009). If threats to intelligence lead to problem-focused coping because of an approach orientation, then priming those receiving an intelligence threat with an avoidance motivation should dilute their tendencies to engage in problem-focused coping since a countervailing motivation is active. Similarly, if threats to personal control lead to emotion-focused coping because of an avoidance orientation, then priming those receiving a threat to personal control with approach motivations should attenuate their tendencies to engage in emotion-focused coping as a countervailing motivation would again be active.

Procedure

Three hundred and two respondents from Mturk participated in this study and were paid \$1.00 for completing the study (see

Appendix B for the sample characteristics). Participants were randomly assigned to conditions in a 2 (threat: intelligence vs. personal control) × 2 (motivation: approach vs. avoidance) between-subject design. We intentionally focused and collected data only on two threats for parsimony and experimental efficiency. The same instruction and procedure was used to manipulate these two threats as in previous studies. Specifically, participants were told that they would take part in the three unrelated studies.

We primed approach and avoidance motivation by following procedures used in prior research (Kramer & Yoon, 2007; Sen & Block, 2009). After participants completed the episodic recall to activate threat, they were informed that they would be taking part in an unrelated second study. Participants were told this second study was interested in their perceptions towards a variety of products. In addition, participants were informed that certain health, beauty, and food products are produced primarily to help consumers accomplish positive outcomes such as increased energy, attractiveness, and shiny hair, while other products are designed primarily to avoid or undo negative outcomes. Participants in the approach motivation condition were then asked to list 10 products that helped bring about positive and desired outcomes. In contrast, participants in the avoidance motivation condition were asked to list 10 products that undo or avoid negative outcomes. After the motivation manipulations, manipulation check measures were administered by using two 7-point items, anchored by 1 = “not at all,” 7 = “extremely,” adopted from Kramer and Yoon (2007). The items read: “My thoughts were focused on products that can help bring about a positive and desired outcome when I listed 10 products,” “My thoughts were focused on products that can help avoid or undo a negative and undesired outcome when I listed 10 products.” Next, as part of a supposedly unrelated third study, participants completed the problem-focused coping ($\alpha = .90$) and emotion-focused coping ($\alpha = .87$; Duhachek & Oakley, 2007). Finally, participants completed demographic questions and responded to questions about the nature of the study. No participants guessed the hypothesis or reported that the studies were related.

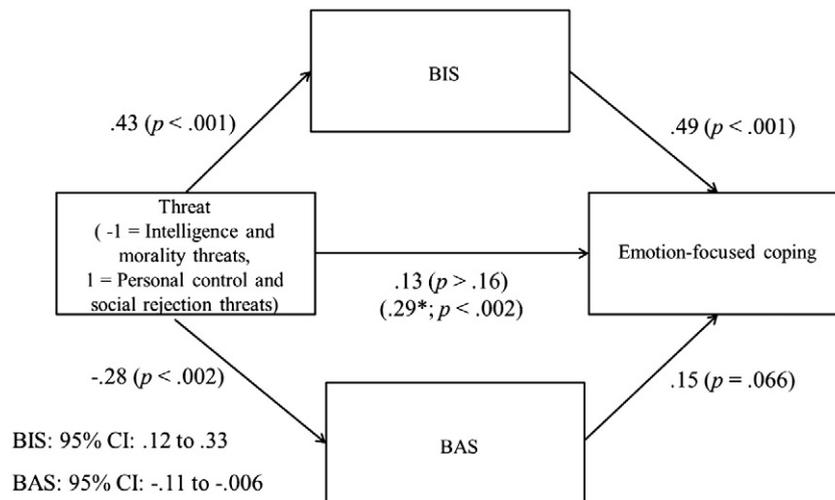


Fig. 1. Bootstrapping analyses for mediation in Experiment 2: The mediating role of BIS (Behavioral Inhibition Scale) and BAS (Behavioral Approach Scale) on the relationship between threats and emotion-focused coping. Note: A value with an asterisk indicates a beta coefficient before controlling for the mediator.

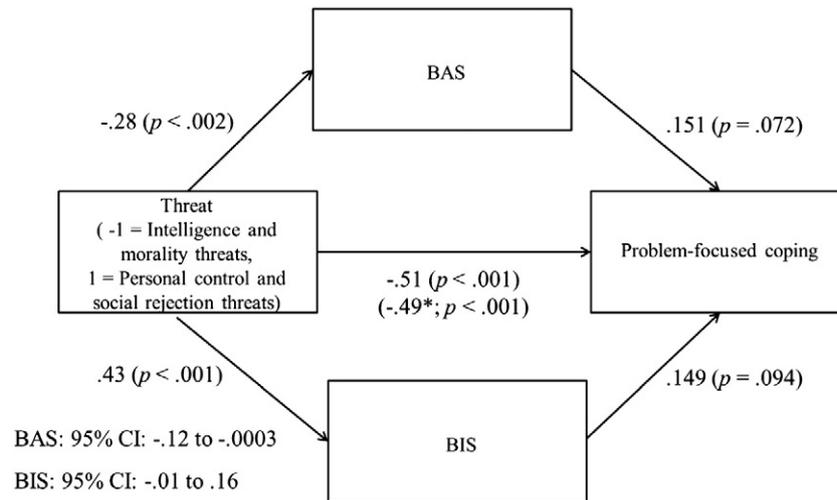


Fig. 2. Bootstrapping analyses for mediation in Experiment 2: The mediating role of BAS (Behavioral Approach Scale) and BIS (Behavioral Inhibition Scale) on the relationship between threats and problem-focused coping. Note: A value with an asterisk indicates a beta coefficient before controlling for the mediator.

Results

Manipulation checks

Results of an ANOVA revealed that the approach ($M_{\text{approach}} = 6.19$, $SD = 1.07$) motivation manipulation made participants focus more on positive outcomes than the avoidance manipulation ($M_{\text{avoidance}} = 4.22$, $SD = 2.05$; $F(1, 300) = 109.18$, $p < .001$). In contrast, the avoidance motivation manipulation ($M_{\text{avoidance}} = 5.66$, $SD = 1.54$) made participants focus more on negative outcomes than the approach motivation manipulation ($M_{\text{approach}} = 3.44$, $SD = 2.04$; $F(1, 300) = 114.34$, $p < .001$).

Coping strategy

A 3-way mixed ANOVA with threats and motivations as between-subject factors and coping strategy as a within-subject factor, found that the effect of coping was not significant ($F(1, 298) = 1.77$, $p > .19$). The 2-way interaction between coping and motivation was significant ($F(1, 298) = 19.92$, $p < .001$) such that in the approach motivation condition, participants endorsed greater problem-focused coping than emotion-focused coping ($M_{\text{problem-focused}_{\text{approach}}} = 6.00$, $SD = 1.41$, $M_{\text{emotion-focused}_{\text{approach}}} = 5.72$, $SD = 1.14$; $F(1, 298) = 4.85$, $p < .03$) whereas those in the avoidance motivation this pattern reversed ($M_{\text{problem-focused}_{\text{avoidance}}} = 5.57$, $SD = 1.34$, $M_{\text{emotion-focused}_{\text{avoidance}}} = 6.03$, $SD = 1.18$; $F(1, 298) = 17.00$, $p < .001$). The 2-way interaction between coping and threat was also significant ($F(1, 298) = 4.05$, $p = .045$); in the intelligence threat condition no difference emerged in endorsement of problem-focused coping versus emotion-focused coping ($M_{\text{problem-focused}} = 5.92$, $SD = 1.40$, $M_{\text{emotion-focused}} = 5.83$, $SD = 1.16$; $F(1, 298) = .25$, $p > .62$), but in the personal control threat condition participants endorsed greater emotion-focused coping than problem-focused coping ($M_{\text{problem-focused}} = 5.62$, $SD = 1.36$, $M_{\text{emotion-focused}} = 5.92$, $SD = 1.19$; $F(1, 298) = 5.22$, $p < .023$). Consistent with the premise that motivational orientation was the key driver of

threats on coping, we did not predict or observe a significant three-way interaction between motivation, threat and coping ($F(1, 298) = .01$, $p > .93$; see Appendix B for complete 3-way mixed ANOVA results).

Next, we examined whether avoidance motivations attenuated participants' tendencies to endorse problem-focused coping in the intelligence threat condition and approach motivations attenuated participants' tendencies to endorse emotion-focused coping in the personal control condition. Planned contrasts showed that for the intelligence threat, the priming of an avoidance motivation attenuated the endorsement of problem-focused coping ($M_{\text{problem-focused}_{\text{approach}}} = 6.24$, $SD = 1.37$) compared to the priming of an approach motivation ($M_{\text{problem-focused}_{\text{avoidance}}} = 5.54$, $SD = 1.35$; $F(1, 298) = 10.47$, $p < .001$). Participants' endorsement of emotion-focused coping was similar regardless of whether an approach or avoidance motivation was primed motivation ($M_{\text{emotion-focused}_{\text{approach}}} = 5.82$, $SD = 1.15$, motivation $M_{\text{emotion-focused}_{\text{avoidance}}} = 5.84$, $SD = 1.16$; $F(1, 298) = .014$, $p > .91$).

For the personal control threat, priming of an approach motivation attenuated participants' tendencies to endorse emotion-focused coping ($M_{\text{emotion-focused}_{\text{approach}}} = 5.57$, $SD = 1.11$) compared to priming an avoidance motivation ($M_{\text{emotion-focused}_{\text{avoidance}}} = 6.21$, $SD = 1.18$; $F(1, 298) = 10.43$, $p < .001$). However, participants endorsed problem-focused coping at similar rates regardless of whether approach or avoidance motivation were primed ($M_{\text{problem-focused}_{\text{approach}}} = 5.66$, $SD = 1.40$, $M_{\text{problem-focused}_{\text{avoidance}}} = 5.60$, $SD = 1.34$; $F(1, 298) = .071$, $p > .79$).

Discussion

Experiment 3 provides further support for the idea that different threats lead to different coping strategies as a result of whether threats are linked to approach versus avoidance motivations. Participants whose intelligence was threatened

activated less problem-focused coping when they were primed with avoidance motivations as compared to when they were primed with approach motivations. The pattern reversed for those whose personal control was threatened; participants' tendency to endorse more emotion-focused coping was attenuated when they were primed with approach motivations. These results support the underlying mechanism of approach and avoidance as our results were attenuated when we activated a motivation counter to that normally activated by the threat.

General discussion

The present research investigated commonalities in consumers' coping responses following threats in distinct domains. We put forth and provided evidence for three central premises. First, we demonstrated that one means to classify psychological threats is in regard to whether they foster approach versus avoidance motivations (premise 1). Second, we demonstrated that when threats incite approach motivations they increase the reliance on problem-focused coping (premise 2). Third, we demonstrated that when threats incite avoidance motivations they increase the reliance on emotion-focused coping (premise 3). Taken together, these findings offer novel evidence that commonalities in threat can be tethered to distinct coping strategies.

Theoretical contributions

We believe the current research offers theoretical contributions to the literature on consumer threats, motivation, and coping. With respect to the consumer literature on threats, past research has primarily explored how consumers react to a specific type of threat (e.g., Gao et al., 2009; Mead et al., 2011; for reviews see Lee & Shrum, 2013; Rucker & Galinsky, 2013). Although papers in this domain have enhanced our understanding of distinct threats, this focus seems to have led researchers away from examining commonalities across threats. Our research identifies one important pair of commonalities in the form of motivational factors. Some threats foster an emphasis on attaining positive outcomes via approach motivations, whereas others foster an emphasis on avoiding negative outcomes and evoke avoidance motivations. As documented in our second pretest, this association seems to result, in part, from lay theories. Further, these motivations affect consumers' preferences for problem-focused versus emotion-focused coping. These findings should encourage researchers to expand the nomological network around threat and compensatory consumption by asking when distinct threats might have common, as opposed to differentiated, psychological processes and consequences.

Of note, our perspective does not hold that all threats need to fit neatly into one of these two broad categories of approach versus avoidance. Rather, as documented in the present research, we suggest that at least some threats can be associated more with approach or avoidance motivations. Our perspective certainly does not preclude the possibility that some threats might activate both or neither motivation. It is possible that for

some threats people possess lay theories that either approach or avoidance are effective strategies, which may yield similar levels of activation.

This research also contributes to the literature on coping and motivation. Prior research on coping has identified factors that lead people to use either problem-focused coping or emotion-focused coping (e.g., Duhachek & Iacobucci, 2005; Lazarus & Folkman, 1984; Sujan et al., 1999). For example, previous research has shown that how individuals cognitively appraise a stressful situation (e.g., cognitive appraisals such as efficacy appraisals or challenge/threat appraisals) activates particular coping strategies (e.g., Duhachek et al., 2012; Skinner & Brewer, 2002). However, the current research offers a contribution to this literature by identifying broad motivational orientations as a novel antecedent of specific coping strategies.

Future directions

A limitation of the present research is that the totality of factors that ultimately lead to an association of a given threat to approach or avoidance orientation remain unclear. As demonstrated in our pretest, it appears that one cause is observational learning where individuals essentially learn to respond to threats in a particular fashion in their culture and thereby acquire lay theories. Although our approach provides a process explanation of how these associations are formed, it does not explain the micro and macro cultural factors responsible (i.e., why people have been taught or learned to associate intelligence with approach over avoidance). In addition, the idea that lay theories contribute to these associations suggests a natural direction for the pursuit of boundary conditions. Specifically, the fact that lay theories exist does not mean they will be activated, utilized, nor that all individuals possess the same lay theory. In addition, the same lay theory might not exist for the same threat in all situations. Thus, the proposed relationship between threats and lay theories is likely to be contextually bound and future research should strive to document these boundary conditions.

One potential direction for future research is to examine whether people's beliefs about the ability to change the threat affects the motivation activated by the threat. Some threats may be so encompassing that the individual is fully immersed in the threat response and does not believe change is easily attained. Such a static view of threats may induce a greater tendency towards avoidance as individuals are forced to confront the possibility their threatened state will endure. In contrast, other threats may foster a strong sense of transience, focusing the individual on the desired end state rather than the threat itself. Such a dynamic conceptualization of threat may orient individuals towards taking action via approach motivations. This provides one potential boundary condition for the existing findings that could be explored in future research.

Finally, although unexplored in the present work, these findings may have important implications for persuasion research. Armed with the knowledge that distinct threats induce specific motivational and coping responses, it seems possible that marketing communications might be molded to maximize their relevance and persuasiveness to consumers. For example,

marketers with a product designed to assuage a particular threat might use advertising to suggest a call to action that maximizes the motivational and coping tendencies implicated by the threat. Imagine that public policy makers recently featured a campaign that warns consumers of the risk of unhealthy eating and induces a mortality threat (i.e., eating poorly will kill you). Given that this threat activates problem-focused coping, marketers might enhance persuasion by positioning their brands to emphasize problem-focused coping (e.g., “Join our fitness club and solve your problems! This fitness club will help you lose 20 pounds, provide detailed diet and training plans and become healthier.”).

Conclusion

Based on prior research, it seems true that different types of psychological threat can affect consumption patterns in specific and unique ways (Galinsky et al., 2012; Lee & Shrum, 2013; Rucker & Galinsky, 2013). Yet, as demonstrated in the present research, it also seems true that at times distinct threats may affect behavior through common pathways in the form of coping strategies. As a whole, the current work suggests the importance of attending not only to the differences, but also the similarities, inherent in distinct psychological threats.

Appendix A. Summary of manipulation checks used in Experiment 1

Construct	Measures
Mortality salience threat ¹	Instructions: Please read each of the following statements and then click on “T” if it is true for you, or “F” if it does not apply to you. In Goldenberg et al. (2000), there are 15 statements. See Goldenberg et al. (2000) for the completed items. Sample statements read: “I am very much afraid to die,” “I fear dying a painful death,” “The sight of a dead body is horrifying to me.”
Intelligence threat ² (a = .94)	To what extent do you feel that you are an incompetent person? To what extent do you feel that you are an unintelligent person? To what extent do you feel that you are an incapable person? To what extent do you feel that you are a useless person?
Personal control threat ³ (a = .87)	In Cutright (2012), there are 5 items. See Cutright (2012) for the completed items. Sample statements read: “I am not in control of most things that occur in my life,” “What happens in my life is often beyond my control.”
Social rejection threat ⁴ (a = .89)	To what extent you feel that there are many people who care about you (reverse-coded)? To what extent you feel very close and connected to other people right now (reverse-coded)? To what extent you feel very alone right now?

¹Adopted from Goldenberg, McCoy, Pyszczynski, Greenberg, and Solomon (2000); we first assigned a score of 0 for choosing the False option and a score of 1 for choosing the True option for each of the 15 death-related thoughts. The mortality salience score was obtained for each participant by summing up his or her scores for all 15 items, with an overall higher score indicating higher mortality salience. ²Adopted and revised from Kim and Rucker (2012); 1 = not at all, 7 = very much. ³Adopted from Cutright (2012); 1 = strongly disagree, 7 = strongly agree. ⁴Adopted and revised from Twenge, Baumeister, DeWall, Ciarocco, and Bartels (2007); 1 = not at all, 7 = very much.

Appendix B. ANOVA with repeated-measure results in Experiment 3

Tests of within-subjects effects	
Coping	$F(1, 298) = 1.77, p > .19$
Coping × threat	$F(1, 298) = 4.05, p = .045$
Coping × motivation	$F(1, 298) = 19.92, p < .001$
Coping × threat × motivation	$F(1, 298) = .01, p > .93$
Tests of between-subjects effects	
Threat	$F(1, 298) = .69, p > .41$
Motivation	$F(1, 298) = .05, p > .83$
Threat × motivation	$F(1, 298) = 6.40, p < .012$

Note: In Experiment 3, because reviewers raised concerns regarding the power in our initial sample (N = 105), we added more subjects (N = 197). Results were similar across the two samples and thus we present them jointly here.

Appendix C. Supplementary data

Supplementary data to this article can be found online at <http://dx.doi.org/10.1016/j.jcps.2015.02.001>.

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