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CHAPTER ONE

Psychosocial Resources: Functions, Origins, and Links to Mental and Physical Health

Shelley E. Taylor *and* Joelle I. Broffman

Contents

Abstract

Psychosocial resources are individual differences and social relationships that have beneficial effects on mental and physical health outcomes. The exact processes whereby psychosocial resources beneficially affect well-being and physical health outcomes have, until recently, been largely unknown. We examine chronic negative and positive affect, approach versus avoidant coping processes, and neural responses to threat as likely mediators. These, in turn, regulate

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psychological, autonomic, neuroendocrine, and immune responses, the likely proximal factors that lead to differential health outcomes. The origins of psychosocial resources are in the early environment, genetic predispositions, and their interaction. We conclude with consideration of whether psychosocial resources can be taught and a discussion of issues remaining to be addressed by future research.

Personality and social psychologists have long studied individual differences in psychosocial resources, including personality traits and social relationships, and their contributions to psychological well-being (e.g., Antonovsky, 1979; Hobfoll, 1989; Taylor, 1983). In the past two decades, it has become evident that many of these same individual differences and relationships contribute to physical health outcomes as well (e.g., Adler, Marmot, McEwen, & Stewart, 1999). In this review, we consider what individual differences and social relationships may reasonably be thought of as psychosocial resources by examining the evidence that they contribute to mental and physical health. Because several of these resources have been studied for nearly 30 years, we draw on reviews and meta-analyses of the literature wherever possible. We next explore possible pathways whereby psychosocial resources have effects on psychological and physical health, including chronic positive or negative affect; approach/active coping; neural activation of brain regions involved in stress regulation; and effects on cardiovascular, endocrine, and immune functioning. We then examine the origins of psychosocial resources in the early environment, genetic predispositions, and their interaction. Together, these findings converge on a multilevel integrative model that ties together observations from the societal level to the molecular level (Fig. 1.1). Finally, we discuss prospects for improving psychosocial resources and address some as yet unresolved issues.

1. Psychological and Social Resources: What Are They?

In this section, we review optimism, mastery/perceived control, self-related resources, social support, and, more briefly, several other individual differences and social factors that have been tied to beneficial mental and physical health outcomes. As will be seen in the later section, these positive resources are somewhat intercorrelated (at ~0.35–0.55) but are also sufficiently independent to warrant independent consideration.

1.1. Optimism

One of the most widely studied psychosocial resources is optimism. Optimism reflects the extent to which people hold favorable expectations about the future (Scheier & Carver, 1992). As a dispositional variable, it reflects

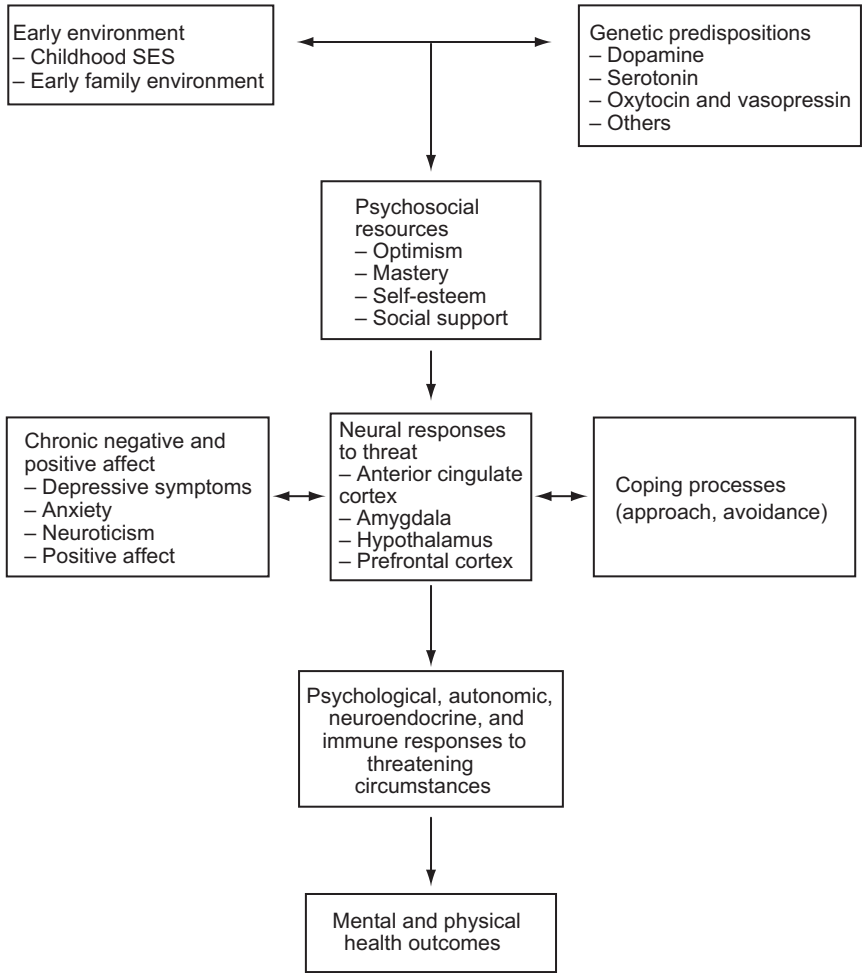

Figure 1.1 A model of the development and deployment of psychosocial resources.

generalized favorable expectations across a broad array of outcomes. Situational optimism reflects favorable expectations in a specific situation; it may or may not be correlated with dispositional optimism, as studies comparing dispositional optimism with measures of situation-specific expectancies often find weak or negligible relations between the two (see Armor & Taylor, 1998 for a review).

1.1.1. Dispositional optimism

The groundbreaking work on dispositional optimism was conducted by Scheier and Carver (1992). To assess dispositional optimism, Scheier, Carver, and Bridges (1994) developed a scale, the LOT-R, that measures

optimism as a pervasive individual difference and includes such items as "In uncertain times I usually expect the best" and the reverse-coded, "If something can go wrong for me, it will."

Controlling for previous well-being, higher levels of optimism are related prospectively to better well-being, especially in times of adversity (for a review, see Carver, Scheier, & Segerstrom, 2010). For example, in a study that speaks to the role of optimism as a resource, Brissette, Scheier, and Carver (2002) had beginning college students complete measures of optimism, perceived stress, depression, and social stress at the start of the college year and again at the end of the first semester. At the end of the semester, optimists reported less stress and depression and more social support, suggesting that their optimistic expectations helped them weather this difficult transition.

Optimism has also been related to better physical health outcomes. It is protective against coronary heart disease in older men (Kubzansky, Sparrow, Vokonas, & Kawachi, 2001), unpleasant side effects of cancer treatments (De Moor et al., 2006), cancer mortality among the elderly (Schulz, Bookwala, Knapp, Scheier, & Williamson, 1996), pain (Geers, Wellman, Helfer, Fowler, & France, 2008; Rosenberger, Kerns, Jokl, & Ickovics, 2009), loss of pulmonary function (Kubzansky et al., 2002), and illness-related disruption of social and recreational activities in breast cancer patients (Carver, Lehman, & Antoni, 2003), among other beneficial health-related outcomes (see Carver et al., 2010, for a review). Optimism has also been tied to a longer life (Giltay, Geleijnse, Zitman, Hoekstra, & Schouten, 2004; but see Tomakowsky, Lumley, Markowitz, & Frank, 2001).

Exactly how optimism achieves these effects has been examined, and the fostering of active approach-oriented coping efforts has been implicated in several studies (e.g., Scheier, Weintraub, & Carver, 1986). For example, in a study with coronary artery bypass patients, Scheier et al. (1989) found that optimists' use of more problem-focused coping and less use of denial led to a faster rate of recovery during hospitalization and a faster rate of returning to normal activities after discharge. Optimism also predicted postsurgical quality of life 6 months later. In the college student study noted above (Brissette et al., 2002), the reasons why optimists managed the stress of college better included the fact that the optimists were more likely than pessimists to seek out social contact with others and to positively reinterpret the stressful circumstances they encountered. Active coping has been found to mediate the relation of optimism to better adjustment in stressful circumstances (Brissette et al., 2002; Carver et al., 1993). Optimists also use more emotional approach coping (Stanton, Danoff-Burg, Cameron, & Ellis, 1994; Stanton, Sullivan, & Austenfeld, 2009), especially in dealing with uncontrollable stressors (Carver et al., 2010).

Other potential mechanisms linking optimism to mental and physical health outcomes include the fact that optimism is reliably associated with a

stronger sense of personal control (Ruthig & Chipperfield, 2006), a more positive mood, and better health behaviors (Carver et al., 2010). Optimism is related to more social resources as well, such that optimists have better social connections than pessimists; social connections, in turn, appear to increase optimism (Carver et al., 2010), so there is a reciprocal relation between these variables. Optimism has been tied to lower physiological responses to stress (Carver et al., 2010), which may account, in part, for its relation to better physical health outcomes. Optimism has also been tied to better immune functioning, in part via its association with a more positive mood (Segerstrom & Sephton, 2010).

1.1.2. Situational optimism

The literature on situational optimism has addressed primarily the outcomes of goal pursuit and performance, rather than mental and physical health outcomes. On the whole, optimistic expectations have been found to facilitate performance and progress toward goals (Armor & Taylor, 1998). An important theme that the dispositional versus situational optimism literature highlights, accordingly, is the continuity between research on everyday pursuit of goals and research on coping with stress. That is, studies of dispositional optimism often concern how people cope with stressful events, and so outcomes assessed are typically psychological distress and health-related outcomes. In contrast, the situational optimism literature more commonly examines goal-oriented motivation and performance, and so those studies tend to emphasize achievement-related outcomes (Armor & Taylor, 1998). This distinction between goal setting and attainment and stress reduction may be somewhat arbitrary because, in fact, parallels between the two literatures are evident and may be instructive: Both literatures make compelling cases that optimistic expectations about one's outcomes facilitate adaptive problem-solving activity and approach-oriented activities. For example, in one study (Solberg Nes, Evans, & Segerstrom, 2009), dispositional optimism predicted staying in school via enhanced motivation and better psychological adjustment; academic optimism, that is, specific optimism related to the academic environment, predicted staying in school via its effect on grade-point average, as well as via motivation and adjustment.

Is there a downside to optimism? Whether unrealistic optimism is beneficial has been widely explored in the situational optimism literature, specifically, whether it incurs potential risks, such as disappointment or unrealistic goal setting (e.g., Weinstein, 1982). A review by Armor and Taylor (1998) concluded that these risks may not be as common or as problematic as originally expected. Although people who are unrealistically optimistic may fall short of their overly optimistic expectations, it appears that they, nonetheless, achieve more than they would have, had they maintained more pessimistic assessments (e.g., Armor & Taylor, 2003).

A second concern has centered on whether optimism blinds people to realistic risks to which they should be attentive. On the whole, this concern may also be less worrisome than first thought. For example, in three experimental studies with diverse methods, Aspinwall and Brunhart (2000) found that optimistic beliefs were linked to greater, not lesser, processing of health risk-related information, as the level of self-relevant threat increased (see also Geers, Wellman, Seligman, Wuyek, & Neff, 2010). Taylor et al. (1992) found that gay men who were unrealistically optimistic about their ability to stave off AIDS engaged in more health-promoting behaviors and utilized more active coping than those who were less optimistic (see also Reed, Kemeny, Taylor, Wang, & Visscher, 1994). It may be that optimists are more confident than pessimists that their efforts to control or reduce their risk will be successful and, thus, may be more likely to engage in these efforts (Carver et al., 2010). As will be seen, there is neural evidence consistent with this hypothesis as well. However, not all research suggests benefits of unrealistic optimism (see Luo & Isaacowitz, 2007), and so the evidence on this issue remains mixed.

Because optimists are more persistent than pessimists in pursuing their goals, this can lead to other potential costs. Specifically, optimists can experience short-term physiological costs in reactivity because of their enhanced striving. When optimists' expectations are not met, they may experience more stress and more compromised immune functioning as a result of their unsuccessful efforts to attain goals (Segerstrom, 2001), including suppressed immune responses (Segerstrom, 2006). More typically, though, optimism enables people to deploy coping skills more effectively and, thereby, reduces stress.

People seem to have an intuitive wisdom about their optimistic expectations, especially when those expectations might be somewhat positively biased, and they behave in such a way as to minimize personal costs of misplaced optimism. First, people are not indiscriminately optimistic. For example, as they move closer to the outcomes they seek, their optimistic expectations become more tempered, presumably because the reality of potentially falling short becomes more evident (e.g., Gilovich, Kerr, & Medvec, 1993; Shepperd, Ouellette, & Fernandez, 1996). Second, human beings have substantial interpretive abilities so that outcomes that fall short may be recast to be consistent with initial expectations (Armor & Taylor, 1998). Although overly optimistic expectations are rarely completely fulfilled, optimistic predictions tend to yield favorable evaluations of outcomes (e.g., Sherman, 1980). This might be achieved, for example, by shifting one's standard of evaluation or by "getting what you want by revising what you had" (Conway & Ross, 1984). People tend to be more unrealistically optimistic about outcomes that are not easily verified, as opposed to outcomes can be easily verified. Thus, for example, desired outcomes that are more subjective may generate more unrealistic optimism than those that can

be objectively measured (Armor & Taylor, 1998). Moreover, although expectations often tend in the direction of an optimistic bias, they are not out of touch with reality; they show relative, if not absolute, accuracy.

In conclusion, the association of dispositional optimism with beneficial outcomes is paralleled in research on situational optimism (Armor & Taylor, 1998) and may be underpinned by some of the same mechanisms, such as active coping, despite the focus on different outcomes.

1.2. Mastery/psychological control

The belief that one can master or exert control over the environment has long been considered adaptive, both for pursuing personal goals and for helping people to cope with threat or stress (e.g., Poortvliet, Janssen, Van Yperen, & Van de Vliert, 2007; Thompson, 1981). Mastery or psychological control involves the belief that one can determine one's own behavior, influence one's environment, and bring about desired outcomes. Like optimism, mastery may be dispositional or situational in nature. As a dispositional factor, mastery is typically assessed by the Pearlin Mastery Scale (Pearlin & Schooler, 1978), which includes such items as, "I can do just about anything I really set my mind to" and the reverse-coded, "I have little control over the things that happen to me." On the situational level, mastery/control is typically assessed or manipulated as the perception that one's efforts will enable progress toward or achievement of desired outcomes. Perceived control is conceptually related to self-efficacy, which is the more narrow perception that one can take a specific action necessary to bring about a specific outcome in a specific situation (Bandura, 1977) and to the concept of perceived behavioral control (Ajzen, 2002); perceived behavioral control combines beliefs in mastery/controllability and beliefs about self-efficacy, but is typically treated as a unitary concept (Ajzen, 2002).

Across a broad array of situations using a variety of methodologies, the belief that one can control stressful events has been tied to emotional well-being, successful adjustment to a stressful event, good health behaviors, good performance on cognitive tasks, and good mental health (Gale, Batty, & Deary, 2008; Thompson & Spacapan, 1991). For example, a considerable literature has identified a sense of mastery as a protective factor against depression in response to threat or stress (e.g., Badger, 2001; Dunkle, Roberts, & Haug, 2001; Jang, Haley, Small, & Mortimer, 2002; Pearlin, Lieberman, Menaghan, & Mullan, 1981).

On the physical health side, a sense of control or mastery has been linked to a lower risk of mortality, primarily due to cardiovascular disease (Surtees, Wainwright, Luben, Khaw, & Day, 2006) and to lower levels of cardiovascular risk factors (Mausbach et al., 2008; Paquet, Dube, Gauvin, Kestens, & Daniel, 2010). Perceptions of self-efficacy have been tied to lower

physiological and psychological stress responses and to better mood (Nierop, Wirtz, Bratsikas, Zimmermann, & Ehlert, 2008).

Control may be especially important for vulnerable people, such as children, the elderly, and medical patients who are at risk for exacerbation of health problems (Wrosch, Schulz, Miller, Lupien, & Dunne, 2007). Because control may be difficult for people who already have little opportunity to exert it, anything that enhances perceptions of control may particularly benefit such people. For example, a study by Jeon and Dunkle (2010) found that among older adults, who typically experience a reduced sense of mastery relative to younger people, those higher in sense of mastery were less likely to experience depressive symptoms over time and, thus, mastery acted as a protective resource.

An important aspect of psychological control is the fact that people often generate feelings of control spontaneously to help them cope. For example, medical patients with chronic or advancing disease often generate perceptions that they can control aspects of their illness, such as its symptoms, course, and treatment (Taylor, 1983). Generally speaking, these perceptions are adaptive (Helgeson, 1992; Michela, 1987; Taylor, Lichtman, & Wood, 1984), even when they are not completely realistic (Taylor, 1983). For example, cancer patients' beliefs that they have control over aspects of their disease or care seem to reflect a capacity to adapt, rather than a vulnerability to distress (Henselmans et al., 2010; Wrosch et al., 2007).

Paralleling the dispositional–situational distinction in research on optimism, studies of situational control or mastery often focus on goal achievement in specific situations. For example, behavioral intentions and perceptions of behavioral control are strong predictors of subsequent behavior and link attitudes to actions (Ajzen, 2001). A large literature on implicit theories of learning (Dweck, in press) indicates that beliefs that one can modify one's personal attributes are very important to achievement. The belief that abilities are malleable and controllable is important not only for guiding activities toward goals but especially for confronting challenges and setbacks (Dweck, in press). An experimental study revealed a related pattern (Pham, Taylor, & Seeman, 2001). College student participants were exposed to an experimental priming manipulation that made salient the unpredictable/uncontrollable aspects of college, the predictable/controllable aspects of college, or neutral features of the college environment. They later completed a thought-listing task about college. Participants who had been exposed to the predictable/controllable manipulation made more references to the future and more references to personal goals in their thought-listing protocols than those in the neutral or the uncontrollable condition.

The perception of control is not a panacea for all aversive situations. People who desire control may especially benefit from interventions that emphasize it (Thompson, Cheek, & Graham, 1988), but control can be

aversive when it gives people more responsibility than they want (Chipperfield & Perry, 2006). Providing too much information or too many choices may be stressful and exacerbate, rather than ameliorate, distress (e.g., Iyengar, 2010; Schwartz, 2004; Thompson et al., 1988). Nonetheless, on the whole, control is a beneficial psychosocial resource.

What are the avenues by which control beneficially affects mental and physical health? They appear to parallel some of the same mechanisms found for optimism. That is, feelings of control or mastery lead people to make active coping efforts. Beliefs in control can also alter physiological responses to stress. For example, in the Pham et al. (2001) study described earlier, participants who had been primed to think of college as predictable and controllable had lower systolic blood pressure and heart rate reactivity in response to the experimental task, compared with those in the neutral condition and the unpredictable condition.

1.3. Self-related resources

Self-related resources, such as self-esteem and the self-concept, have been widely examined for their effects on well-being and health.

1.3.1. Self-esteem

Like optimism and mastery, self-esteem has been studied as a disposition and as a factor that can vary by situation or life domain (Campbell, 1990; Crocker & Knight, 2005). When studied as a disposition, the Rosenberg Self-Esteem Scale (Rosenberg, 1965) is often administered, which includes such items as, "I feel that I have a number of good qualities" and the reverse-coded, "All in all, I am inclined to feel that I am a failure."

The relation of self-esteem to well-being is virtually definitional, and conventional definitions of mental health maintain that feeling good about oneself is a central component (see Taylor & Brown, 1988). Empirical evidence supports this idea. For example, using two large longitudinal datasets including more than 4000 people aged 18–96 years, Orth, Robins, Trzesniewski, Maes, and Schmitt (2009) found that low self-esteem predicted subsequent depressive symptoms (whereas depressive symptoms did not predict subsequent low self-esteem). The pattern was consistent across all age groups, for several measures of depression, and after controlling for content overlap between the measures. Using two large longitudinal datasets, with repeated measures on people ages 15–21 and 18–21, Trzesniewski, Donnellan, Moffitt, Robins, Poulton, and Caspi (2006) again found that low self-esteem predicted subsequent levels of depression, but not the reverse. Low self-esteem in adolescence was also predictive of poorer mental and physical health, worse economic prospects, and a higher likelihood of engagement in criminal behavior during adulthood, relative to high self-esteem; these effects were not explained by

depression or SES. Thus, low self-esteem appears to be a risk factor for psychological distress at all ages during adult life (Orth et al., 2009). For the most part, self-esteem seems to be more protective at lower levels of stress; at high levels of stress, stress itself can overwhelm the benefits of self-esteem (Whisman & Kwon, 1993). Even when self-regard is somewhat overly positive, it can have mental health benefits (Kwan, Love, Ryff, & Essex, 2003; Taylor et al., 2003a).

Self-esteem may exert its effects on health outcomes by some of the same routes as optimism and mastery. For example, people with high self-esteem have been found to use less avoidant and more approach-oriented coping (Aspinwall & Taylor, 1992). Similar to the findings for mastery (Dweck, in press), Crocker and colleagues (e.g., Niiya, Brook, & Crocker, 2010) found that people who believe that they can improve their personal qualities are more resilient in response to failure than people who do not. Low self-esteem is a potent predictor of psychological and biological reactivity to stress (Pruessner, Lord, Meaney, & Lupien, 2004) and thus can compromise well-being; these effects may be mediated by social bonds (Stinson et al., 2008).

1.3.2. Ego strength

Related to self-esteem is a cluster of personality qualities called ego strength, including dependability, trust, and lack of impulsivity (Deary, Batty, Pattie, & Gale, 2008). This cluster appears to have health benefits. For example, in a longitudinal investigation (Friedman et al., 1995), researchers studied adults who had first been interviewed as children in 1921–1922. Those who were high in ego strength as children lived longer as adults. One reason is that the people with high ego strength were less likely to smoke and use alcohol to excess, and so one route that may link ego strength to health outcomes is better health habits (Friedman et al., 1995; Temcheff et al., 2010).

1.3.3. Self-concept

The self-concept is not inherently a psychosocial resource but, rather, represents the beliefs that people hold about their personal attributes. Nonetheless, there are aspects of the self-concept that may act as psychosocial resources. For example, people who hold multiple roles and have multiple areas in their lives that are sources of reward are better buffered against setbacks than people who do not (Chrouser Ahrens & Ryff, 2006; Linville, 1987; Waldron, Weiss, & Hughes, 1998). The self-concept represents areas of vulnerability as well as resilience. Within the self-concept, certain domains are central, such as the work role or the marriage role, whereas others may be more peripheral, such as one's sense of self as a decent tennis player. Threats to core areas of the self engage defensive processing of personally relevant risk-related information, whereas threats

to more peripheral areas of the self may lead people to refocus their efforts on other self-relevant life domains (Sherman & Cohen, 2006).

1.3.4. Self-affirmation

An extensive literature has examined whether manipulating self-related resources improves well-being, health, and coping with stress (Sherman & Cohen, 2006). Much of this work is guided by the theory of self-affirmation (Steele, 1988), which asserts that the goal of the self system is to protect a positive self-image; when self integrity is threatened, people respond to restore self-worth. People may affirm alternative self resources, as by reflecting on important aspects of life irrelevant to the threat or by engaging in an activity that makes personal values salient, such as religion, the importance of friends and family, or artistic endeavors. In a typical self-affirmation study, people rank order their values and then are instructed to focus on a value that ranks high for them versus one that is less important (low self-affirmation), and they are then are exposed to tasks or information that threaten the self.

On the mental health side, self-affirmation can reduce ruminative thinking among people exposed to a personal threat, such as failure on an IQ test (Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999), and buffer people biologically against stress. For example, in one study (Creswell et al., 2005), people who had either affirmed an important value or a less important value participated in stressful tasks in the laboratory (the Trier Social Stress Task, involving difficult mental arithmeticand the preparation and delivery of a speech to an unresponsive audience; Kirschbaum, Klauer, Filipp, & Hellhammer, 1995). Those who had self-affirmed in advance showed lower cortisol responses to the tasks. Trait self-esteem and optimism moderated the relation between self-affirmation and psychological distress, such that participants who had dispositional self resources and who had affirmed personal values reported being the least stressed. Sherman, Bunyan, Creswell, and Jaremka (2009) reported that self-affirmation exercises resulted in lower urinary catecholamine levels in response to the stress of exams.

Self-affirmation can also affect physical health-related outcomes. Keough (1998) found that participants who wrote self-affirmation essays over the winter break were less likely to visit health services upon their return to school. Health behaviors may be beneficially affected by self-affirmation as well (Sherman, Nelson, & Steele, 2000). Linking health behavior change campaigns to identity cues related to personally important values can improve the long-term impact of such messages (Dal Cin, MacDonald, Fong, Zanna, & Elton-Marshall, 2006).

An important caveat regarding self-affirmation is that the self-affirmation needs to be in a domain different from that involving the threat. Thus, for example, self-affirmation of values unrelated to a threatening or stressful