

PART I

Mental and Physical Health

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Dealing with Adversity: Self-regulation, Coping, Adaptation, and Health

Lisa G. Aspinwall

How do people cope with chronic or life-threatening illness and other negative life events, such as bereavement, disability, and long-term unemployment? The study of adversity – of serious, protracted, and often uncontrollable negative experiences – has provided a great deal of information about how personal, social, and other resources are related to psychological well-being and physical health as people manage negative events and information.

In this chapter, I will review what is known about how people cope with adversity and how such efforts are related to psychological adaptation and physical health.¹ In doing so, I will draw on two large research literatures that have yet to be integrated: coping and self-regulation. *Coping* consists of activities undertaken to master, reduce, or tolerate environmental or intrapsychic demands perceived as representing potential threat, existing harm, or loss (Lazarus & Folkman, 1984). *Self-regulation* is defined as the process through which people control, direct, and correct their own actions as they move toward or away from various goals (Carver, 2001; Carver & Scheier, 1998). Although these literatures have developed largely in isolation, they share a fundamental concern with the relation of personal, social, and situational factors to people's emotions, thoughts, and behaviors as they anticipate or encounter adversity (Aspinwall & Taylor, 1997; Carver & Scheier, 1999; Skinner, in press).

One task of this review is to examine the unique contributions of each literature to understanding how people deal with adversity. I will examine potential contributions in five areas: (1) the conceptualization and measurement of stress and coping; (2) individual differences in coping and outcomes; (3) adaptational processes and outcomes; (4) social processes, such as social comparison and social support; and (5) emotions. In each area, I will highlight a few examples to illustrate the potential for integration across these two active research areas.

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What the Study of Self-regulation Has to Offer the Study of Coping

The first goal of this review is to consider several issues at the forefront of research in self-regulation that might profitably be exported to the study of stress and coping. I will first review some common problems in the conceptualization and measurement of stress, coping, and outcomes, and then suggest two ways in which concepts from self-regulation might afford greater precision in understanding what stressors are, what people are doing to manage them, and how specific ways of coping are related to psychosocial and health outcomes over time.

Problems in the conceptualization and measurement of stress, coping, and outcomes

In general, in its focus on identifying different ways of coping and relating them to psychosocial and health outcomes, the coping literature has spent relatively little time characterizing the stressor. As early as 1984, this lack of attention led Susan Folkman to plead for greater conceptual clarity by asking researchers studying personal control and coping to specify, “Control over what?” Even today, “Coping with what?” would be a reasonable question to ask of most studies, including my own, with no easy answer.

Much of this problem stems from the nearly exclusive use of checklists to assess coping (for detailed critiques, see Coyne & Gottlieb, 1996; Stone, Greenberg, Kennedy-Moore, & Newman, 1991). Respondents are asked to select the most stressful aspect of their situation (e.g. entering college, cancer surgery, relocation) within a given time period (e.g. the past six months), and to rate their use of 50–60 different coping strategies (“made a plan of action and followed it,” “tried to forget the whole thing,” “let my feelings out somehow”; Folkman & Lazarus, 1980). This method can create substantial variation in what people are responding to when they complete inventories, because there may be many different stressors for each “stressful situation,” and it is not known exactly what people are responding to as they complete the inventory. To make matters worse, these checklists also provide limited and inconsistent information about what people are doing to manage the stressor. For example, there is enormous variation, both within and between respondents, in what people are reporting on when they rate their use of various strategies (e.g. their frequency or their effectiveness; Stone, Greenberg, Kennedy-Moore, & Newman, 1991). There are also substantial biases in retrospective recall for coping strategies compared to same-day ratings, especially among people reporting high levels of stress (Smith, Leffingwell, & Ptacek, 1999). Finally, reports of coping may be at least somewhat confounded with psychological distress and/or physical symptoms. Frustration with these limitations has sparked the development of careful process-oriented approaches to *daily coping*, in which daily diary records – for example, of pain, social interaction, and coping – are collected, often in conjunction with physiological measures and objective assessments of demand (e.g. see Affleck & Tennen, 1996; Repetti, 1989; Stone & Neale, 1984).

In addition to these measurement problems, most approaches to coping fail to capture the complexity of the process. The predominant conceptual model in the study of stress and coping – Lazarus & Folkman’s (1984) transactional model – is based on the idea that coping

is a complex, ongoing process in which relations among appraisals of the event and one's resources to manage it, coping efforts, and outcomes are recursive (Lazarus, 1990). Current approaches simply do not capture these aspects of the transactional model. For example, coping checklists provide little information about the social or environmental context of a stressful event (Aldwin & Stokols, 1988; Coyne & Gottlieb, 1996; Revenson, 1990) or its meaning to the person. They also neglect the temporal ordering and functional interrelation among different coping strategies as people manage ongoing stressors and acquire information about them (Aspinwall & Taylor, 1997). For these reasons, it is difficult to determine what made the event stressful, what people did to manage it and why, and how specific ways of coping were related to psychosocial and health outcomes months later. In the following sections, I will examine two ways of conceptualizing stress and coping that may elucidate these issues.

The potential value of goals in understanding stress and coping

One useful starting point in understanding what the stressor is, what it means to people, and how they think about it would be to identify how negative events and information affect people's pursuit of their goals. That is, what specific goals are affected by the experience of adversity? A large literature on self-regulation and goal-striving has identified several properties of goals and the way we represent them that may be useful in clarifying the nature of stress and people's efforts to manage it (for reviews, see Austin & Vancouver, 1996; Gollwitzer & Bargh, 1996). In this section, I will present a few of these approaches and discuss their potential value in understanding responses to adversity.

Idiographic approaches to goal-striving

Idiographic approaches, whether they are called personal projects (Little, 1983), personal strivings (Emmons & King, 1988), life tasks (Cantor, 1990), or possible selves (Markus & Nurius, 1986), examine self-regulation with respect to important personally defined goals. Respondents are asked to list their goals (both hoped for and feared), rate such aspects as importance or centrality to the self-concept, indicate whether they are in conflict, and so forth, in ways that provide a rich picture of people managing multiple goals and self-conceptions.

These approaches offer several advantages over current methods. First, allowing respondents to identify and describe their goals makes it clear what people are responding to when they describe their coping efforts. As King (1996) has noted, behavior that appears counterproductive with respect to one goal may actually have been undertaken in the service of a completely different goal. For example, the student adjusting to college who reports drinking may be doing so to make new friends, not to avoid thinking about his chemistry course.

Second, this approach allows people to list multiple goals and to describe how they are related. People rarely work toward one goal or experience a stressor in isolation. Instead, the experience of a setback in one area is likely to create changes, for better or for worse, in efforts to meet other goals. Some researchers have hypothesized that individual differences

in coping outcomes may actually be due to the differential impact of a focal stressor on other areas of life (Pearlin, Aneshensel, & LeBlanc, 1997). That is, the experience of adversity in one life domain, such as adopting a caregiving role, may have most of its impact on outcomes like depression by creating problems in other domains, such as work and social activities.

Third, these approaches provide one way to incorporate the study of the self into the study of stress and coping. Many studies have used constructs such as self-esteem or self-confidence to predict coping and outcomes, but relatively few studies have assessed the effects of adversity and ways of coping with it on the self-concept (see Kling, Ryff, & Essex, 1997, for an exception). The experience of serious illness and other life events is sure to create a multitude of changes in goals, the self-concept, and their interrelation that are just beginning to be examined (Emmons, Colby, & Kaiser, 1998). Further embedding the study of stress in the context of developmental tasks and larger life goals may provide additional insight into how people understand and respond to particular kinds of adversity.

Beliefs about the threatened goal

Beliefs about the nature and future course of a threatened goal are highly important influences on self-regulation. Consider a college freshman who receives a “D” on her first chemistry exam. The meaning of this event may critically depend on her beliefs about whether students typically mature and “hit their stride” as sophomores, or whether initial difficulties are a signal that one will encounter future difficulties (Aspinwall, 1997). Additionally, her beliefs about whether academic performance is a stable entity (you have it or you don’t) or an incremental one that can be developed through effort will play a large role in how she prepares for the next exam (Dweck, 1996). Such beliefs may stem from many sources, for example, from a more general attributional style (Peterson & Seligman, 1984), from socially prescribed beliefs about the time course of adjustment to particular kinds of adversity (e.g. bereavement; Wortman & Silver, 1987), or from expectations about developmental phenomena, such as maturation and aging (Aspinwall, 1997).

Ways of framing goals

A third area that has yet to be fully mined for its value in understanding stress, coping, adaptation, and health is a rich literature on how people represent goals (approach vs. avoidance goals: Elliott, Sheldon, & Church, 1996; promotion vs. prevention regulatory focus: Higgins, 1996). These properties of goal-pursuit – whether one is coping to attain something or to avoid something – have profound implications for the strategies and criteria that people use to see if they have met their goal. For example, a person striving for an approach goal (being independent) will look for confirming instances of independence, whereas a person with an avoidance goal in the same domain (not being dependent) will monitor his behavior for instances of dependence. The former gets to experience moments of success, while the latter attends mostly to instances of failure (Coats, Janoff-Bulman, & Alpert, 1996). Such differences are likely to have profound implications for emotional experience, persistence,

and self-confidence in the threatened domain and for psychological well-being over time (Coats, Janoff-Bulman, & Alpert, 1996; Elliot, Sheldon, & Church, 1996).

Summary

People's beliefs about how adversity affects multiple, personally defined goals, their beliefs about themselves, and their likely future outcomes are essential to understanding how people respond to negative events and information. Some of these concepts are just beginning to be incorporated in the study of stress and coping with good success. A broader and more systematic integration of these goal constructs with the study of stress and coping has even greater promise.

Understanding How Individual Differences are Related to Psychosocial and Health Outcomes

A second major way in which theories and concepts from self-regulation could advance the coping literature is in elucidating the processes through which individual differences are reciprocally related to psychosocial and health outcomes. A reliable cast of "heroes" and "villains" has emerged from two decades of studies of individual differences in coping. The heroes – optimism, control beliefs (e.g. self-mastery, self-efficacy), hardiness, and perhaps high self-esteem – are prospectively linked to constructive ways of coping, good psychosocial outcomes, and good health. In contrast, the villains – neuroticism, depression, anxiety, and pessimistic explanatory style – have been prospectively linked to ineffective and often destructive ways of coping, poor psychosocial outcomes, and an alarming array of poor health outcomes, including earlier mortality (see Taylor & Aspinwall, 1996, for a review).

Despite the consistency of these findings, relatively little is known about how these individual differences "work"; that is, how do the "good guys" help people achieve or maintain psychological well-being and physical health during times of stress, and how do the "bad guys" compromise such outcomes?

There are many potential mediators of such effects, including the effects of mood and chronic stress on immune function, stress reactivity, and health behaviors (Cohen & Rodriguez, 1995); however, the most-studied link between individual differences and adaptational outcomes is reported ways of coping with stress. In the following section, I present a model that may elucidate how specific individual differences are related to coping and outcomes as people respond to negative events and information.

A process-oriented framework for understanding how psychological resources and vulnerabilities may "work" as people anticipate or encounter adversity

Figure 1.1 presents a five-part model of the process of detecting and responding to negative events and information (Aspinwall & Taylor, 1997). The first stage of the model is *resource*

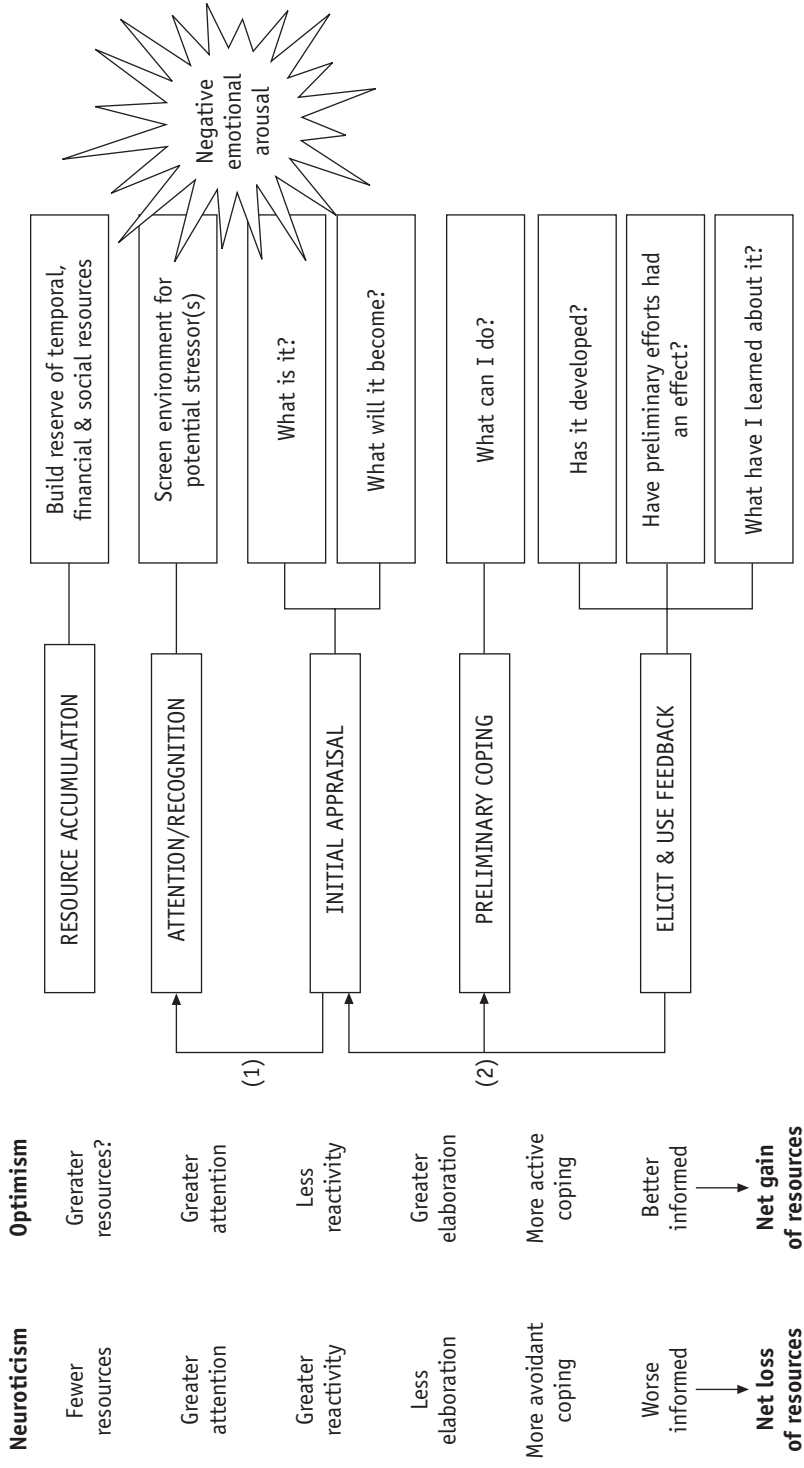


Figure 1.1 Aspinwall & Taylor's (1997) five-step model of the process of detecting and responding to negative information. Feedback Loop 1 represents the reciprocal relation among attention/recognition, initial appraisals, and the regulation of negative emotional arousal. Feedback Loop 2 represents the reciprocal relation among appraisals, coping efforts, and information gained from one's efforts to manage an actual or potential stressor. The chart at the left of the figure illustrates how neuroticism and optimism may work at each stage of the model as people anticipate or encounter negative events and information. Figure adapted with permission, copyright American Psychological Association and L. G. Aspinwall and S. E. Taylor (1997).

accumulation. Resources are the first step of our model for three reasons. According to Hobfoll's (1989) conservation of resources theory, people are motivated to retain, protect, and build resources. Hobfoll defines stress as the loss of resources, the potential loss of resources, or the failure to gain resources in proportion to one's investment in a task. These resources can be objects, personal characteristics (mastery, self-esteem), conditions (employment, marriage), or energies (time, money, knowledge) that have either symbolic or instrumental value to the individual. The presence of resources, therefore, plays a large role in determining the kinds of events and information that may be stressful to a given person. Second, most of the critical tasks of coping and self-regulation, such as attention to negative information, coping, and the use of feedback, require personal, social, and other kinds of resources. Third, increasing evidence suggests that such resources may be depleted over time as a function of the ways people deal with adversity (Bolger, Foster, Vinokur, & Ng, 1996; Smith & Wallston, 1992).

The next step of the model is *attention/recognition*. In this step, one screens the environment for potential stressors. If one is detected, a process of *initial appraisal* begins. In this step, people are trying to figure out what a potential or actual stressor is and what it is likely to mean for them. An important part of the model is that the detection of stressors often creates *negative emotional arousal* that may not only prompt efforts to regulate these emotions, but may also interfere with subsequent processing of information. Initial appraisals give rise to *preliminary coping efforts*, such as efforts to solve the problem, to gain more information about it, or to enlist the aid of others. A final and critical part of the model is the *elicitation and use of feedback* about the success of one's coping efforts and the information such efforts have yielded about the stressor and one's resources to manage it.

The model is recursive in three important ways that will be illustrated in greater detail in subsequent sections. First, as illustrated by Feedback Loop 1, attention, appraisal, and the regulation of emotion are interrelated as people maintain attention to actual or potential stressors. Second, as illustrated by Feedback Loop 2, appraisals may be revised in light of information obtained in the course of trying to manage the stressor. Finally, the entire sequence of events is recursive, as the component activities of the model – attention, appraisal, coping, and use of feedback – are related over time to the conservation, development, or depletion of resources. Such a process may account for intriguing patterns of resource depletion and gain that have been identified in a number of stressed populations.

In the following sections, I use this model to examine the role that psychological resources, like optimism, and psychological vulnerabilities, like neuroticism, may play at each stage in the model, starting with baseline resources and finishing with resource gain or depletion as a result of exposure to adversity. It is important to note that similar findings have been obtained for other potential resources (such as self-mastery, hardiness, and other control-related constructs) and vulnerabilities (such as anxiety, depression, and pessimism; see Aspinwall & Taylor, 1997, and Taylor & Aspinwall, 1996, for reviews). I have chosen optimism and neuroticism to highlight the possibility that psychological resources and vulnerabilities may have distinct effects. That is, the presence of positive beliefs or emotions may have unique effects on coping, adaptation, and health that cannot be explained by simply the absence of negative beliefs or emotions, and vice versa. A full discussion of the conceptual status of these two constructs, however, is beyond the scope of this chapter.

Understanding neuroticism as a psychological vulnerability

Neuroticism or negative affectivity is the propensity to experience negative emotions, such as anxiety, depression, and hostility (Watson & Clark, 1984). Often overlooked in the study of stress and coping is the possibility that certain individual differences are associated with greater exposure to stressful events in the first place and with differences in the baseline availability of social support. From the outset, people high in *N* have more stress to manage, and at every stage in the coping process, this individual difference appears to compromise effective appraisal and action. As I will describe, the net result may be cumulative loss of resources with each successive exposure to adversity.

Stress-generation and baseline resources Large-scale panel studies of exposure to stressful life events find that people high in *N* experience more negative life events (Headey & Wearing, 1989), possibly through a process of interpersonal stress-generation. People high in *N* also report greater reactivity to negative events (Bolger & Schilling, 1991). Both greater exposure and greater reactivity to negative events increase cumulative load and deplete resources. Therefore, the person high in *N* who encounters a new negative event starts with fewer resources.

Attentional processes Neuroticism has been found not only to increase attention to negative information, but also to make it difficult to turn away from it (Derryberry & Reed, 1994). Such amplifications in attention to threatening information are likely to affect coping in several ways. First, one might see potential threat or danger in most situations. Second, hypervigilance to negative information may deplete resources, because it takes energy to stay on the lookout for and respond to several different potential sources of stress. Third, the ability to regulate one's attention flexibly and appropriately is essential. A person devoting resources to monitoring several potential threats simultaneously may be unable to discriminate those that require immediate attention from those that do not.

Appraisal processes Neuroticism is linked to greater appraisals of threat or loss, especially in ongoing situations, and to less favorable appraisals of problem-solving ability. This combination of high appraisals of threat and low appraisals of resources to manage it is, by definition, what creates stress in Lazarus & Folkman's (1984) model. It is also the pattern of appraisals that predicts physiological threat responses and poor performance on demanding mental tasks (Blascovich & Tomaka, 1996). As a result, as shown in Feedback Loop 1, even though people high in *N* may be devoting a great deal of attention to negative information, their appraisals of it may not correspond well to the nature of the stressor because of their greater reactivity to it.

Preliminary coping efforts The perception of low problem-solving resources may lead to the failure to engage in active coping. *N* has been linked to many forms of avoidant coping, such as wishing the problem would go away, avoiding thinking about the problem, and substance use, that are themselves linked to poor outcomes over time (Bolger, 1990; Holahan

& Moos, 1986; McCrae & Costa, 1986; Watson & Hubbard, 1996). When people high in *N* do try coping actively, the poor quality of their appraisals may lead to coping efforts that do not match the problem.

Elicitation and use of feedback In addition to creating new problems, avoidant strategies carry another serious liability: they are less likely than active ones to elicit information about the problem. Avoidance coping is unlikely to elicit useful information about the particular problem or about coping in general and thus does not contribute to the acquisition and refinement of procedural knowledge about coping. Further, as distress increases, people's ability to generate alternatives and to use multiple criteria in their decisions has been shown to decrease, further compromising appraisals and coping efforts, especially if the problem is ongoing and changing (Aspinwall & Taylor, 1997). The increasing divergence between the coping strategies used and the nature of the problem illustrated in Feedback Loop 2 may further exacerbate the problem, because resources are being wasted while the problem is going unchecked.

Depletion of social resources Finally, although it is not shown as a separate step in the model, neuroticism and avoidant coping have both been prospectively linked to the depletion of social resources in ways that have implications for coping efforts and subsequent well-being. First, the use of social withdrawal as a coping strategy prospectively predicts declines in social support (Evans & Lepore, 1993; Smith & Wallston, 1992). Avoiding others during times of stress also prevents one from receiving appraisal support that might be useful in understanding the problem, from receiving informational and instrumental support that might aid in its solution, and from receiving emotional or esteem support that might offset feelings of failure and decreasing confidence.

A second pathway through which social resources are depleted begins when people make frequent, exaggerated efforts to obtain social support, often through excessive reassurance seeking (Coates & Wortman, 1980; Joiner, Metalsky, Katz, & Beach, in press). Intense displays of negative affect and poor coping have been shown to cut short social interaction, to create increasing distance between the sufferer and those who might help (Silver, Wortman, & Crofton, 1990), and to erode social support over time (Bolger, Foster, Vinokur, & Ng, 1996). Finally, these two patterns may be interrelated if people first make exaggerated attempts to obtain support, then withdraw when they find it lacking. The net result of either pathway is the depletion of valuable social resources for coping.

Summary: a downward spiral of ineffective coping and resource loss In sum, people high in *N* and related characteristics, such as depression and anxiety, appear to generate more stress and to respond to negative events and information in ways that deplete resources through hypervigilance, reactivity, ineffective coping efforts, social isolation or alienation, and diminished opportunities for learning about different ways of coping with problems. Additionally, once people are distressed, they may simply be less likely to perceive their resources favorably even when they do exist (Evans & Lepore, 1993). Working in concert, these factors may create a downward spiral of resource loss with exposure to adversity that increases one's vulnerability to psychological distress, social isolation, and poor health.

Understanding optimism as a psychological resource

A vastly different sequence of events characterizes the psychological resources in our list. I will use research on dispositional optimism, the generalized expectation of good future outcomes (Scheier, Carver, & Bridges, 1994), to illustrate how each step of the model may contribute to a net resource gain or to lower levels of resource loss following adversity among people with such resources.

Attention, appraisal, and the regulation of arousal Increasing evidence suggests that optimism is related to the ability to attend to negative information that is self-relevant or otherwise useful. Aspinwall & Brunhart (1996) demonstrated that optimists differentially attend to and recall information about the risks of their own health behaviors, compared to benefit or neutral information, and compared to risk information about behaviors they do not practice. The exact mechanism underlying such effects has yet to be fully understood, but related experimental work supports the idea that induced positive states increase people's interest in and veridical processing of negative information about themselves (see Aspinwall, 1998, for review).

The ability to maintain attention to self-relevant negative information is likely to confer many advantages in appraising potential stressors. Additionally, optimism and related constructs, such as constructive thinking, have been linked to more favorable appraisals of problem-solving resources and to lower levels of threat-related physiological responding to demanding mental tasks (Katz & Epstein, 1991). As a result, as illustrated in Feedback Loop 1, optimists may be more likely to sustain attention to negative information and may therefore make more accurate and well-elaborated appraisals of it than pessimists.

Preliminary coping efforts Optimism has been linked to greater reports of active coping in several studies. For example, in a prospective study of entering freshmen, Aspinwall & Taylor (1992) found that optimists were more likely to report active ways of coping (such as problem solving) and less likely to report avoidant ways of coping (such as avoiding thoughts about the problem). More active coping and less avoidant coping, in turn, predicted better adjustment to college three months later. These results provide a clear account of how resources like optimism may "work:" because optimists expect good outcomes, they actively work toward them when they encounter adversity.

There is, however, an interesting exception to these findings that may prove to be at least equally important in understanding optimists' responses to adversity. In some studies, optimism is not linked to greater active coping, but instead to greater acceptance of situations beyond one's control. For example, Carver and his colleagues (1993) found that optimistic women with breast cancer were more likely than pessimists to indicate that they had accepted the reality of the fact that they had surgery for breast cancer. This acceptance was related to lower psychological distress at various points in the year following the surgery. It may seem paradoxical that the same psychological "resource" can be linked to both active coping and to acceptance. That is, if the active ingredient in optimism is continued persistence in goal-directed behavior, why do optimists report greater acceptance of problems beyond their control? In the following section, I examine how the final step of the model may account for some of these effects.

Elicitation and use of feedback As illustrated by Feedback Loop 2, active coping is more likely than avoidant coping to elicit information about a problem. Optimists not only tend to cope more actively, but seem also, as discussed earlier, to be better able to attend to negative information. As a result, they may be better able to benefit from feedback about the success or failure of their coping efforts. In this way, optimists may become well-informed about how and when to cope actively, even when their initial attempts are unsuccessful (Aspinwall & Taylor, 1997; see also Armor & Taylor, 1998; Aspinwall, Richter, & Hoffman, in press; Skinner, in press). Such knowledge may be useful in determining whether a problem is amenable to one's efforts or must simply be accepted.

Summary: an upward spiral of efficient coping and resource gain Through the mechanisms outlined in this section, optimists may conserve resources by detecting and managing problems early in their course. Through their active preliminary coping efforts, they may also acquire procedural knowledge about different kinds of problems and ways of coping with them. Such knowledge may be useful in identifying which efforts are most likely to work for certain kinds of problems, leading to more efficient use of coping resources. In sum, optimism seems to lead people to act in ways that may preserve and even build resources, even under conditions of adversity.

This analysis is consistent with others suggesting that positive emotions and experiences serve to build personal and social resources and to broaden action repertoires (Ashby, Isen, & Turken, 1999; Fredrickson, 1998; Isen, 1993). Extending coping research to examine how optimism and other psychological resources are related to the mobilization and preservation of social resources may also provide additional information about how different ways of managing stress are related to subsequent social resources and well-being. Working in concert, such processes may create an upward spiral of increasing resources, skills, and knowledge that may increase people's ability to anticipate and prevent stress and to cope more effectively when it does occur.

Summary

In the preceding sections, I examined two ways in which concepts and methods from the study of self-regulation might provide insight into the coping process. Reconceptualizing stressors in terms of their effects on goals and examining how personal resources and vulnerabilities may influence people's responses to negative events and information may provide insight into what is stressful to people, how people cope with adversity, and how such efforts are related to subsequent outcomes and resources.

What the Study of Coping Has to Offer the Study of Self-regulation

The second major goal of this review is to examine the ways in which studying the beliefs, behaviors, and emotions of people dealing with adversity provides a window on crucial self-regulatory processes that the study of ordinary activities and tasks cannot. In many ways,

the study of coping with adversity is the study of personality under stress (Bolger, 1990; Bolger & Zuckerman, 1995). Serious illness and other negative life events threaten cherished goals, challenge long-held beliefs about the self and the world, and deplete personal and social resources over time. In addition, such events create the conditions of high distress and uncertainty that make the experiences, assistance, and reactions of others especially important in understanding what we are facing and how to manage it. As a result, the coping literature may be uniquely informative in three areas: (1) how people adapt to such challenges, (2) how social processes, such as social comparison and social support, affect coping, adaptation, and health, and (3) how negative and positive emotions affect ways of dealing with adversity. I will provide a brief review of each of these areas.

Adaptation to serious illness and other negative life events

People who have experienced some kinds of negative life events not only manage to survive, but also report profound changes in their lives, often to the point of rating their current situation as superior to their life before the event (Affleck & Tennen, 1996; Updegraff & Taylor, in press; see Davis, Lehman, & Wortman, 1999, for important exceptions). People often report having learned valuable information – both positive and negative – from their experience. The following section examines some of these changes and discusses their implications for understanding self-regulatory processes.

Cognitive adaptation to negative life events

How is it that people who have encountered severe adversity experience positive changes in their lives and maintain hope for the future? In her seminal paper on cognitive adaptation, Taylor (1983) suggested that these changes arise in response to three tasks that people undertake following a negative life event: *searching for meaning* (why did the event happen?, what is its impact?), *regaining mastery* (how can I keep the event from happening again?, how can I manage it now?), and *enhancing self-esteem*. Consider the following comments from Taylor's (ibid., p. 1,163) interviews of women with breast cancer:

I have much more enjoyment of each day, each moment. I am not so worried about what is and what isn't or what I wish I had. All those things you get entangled with don't seem to be part of my life right now.

I was very happy to find out I am a very strong person. I have no time for game-playing any more. I want to get on with life. And I have become more introspective and also let others fend for their own responsibilities. And now almost five years later, I have become a very different person.

These comments illustrate a number of key elements of psychological adaptation to serious illness: the increased enjoyment of everyday activities, changes in control efforts, and changes in views of the self as stronger and more focused. I will consider each of these elements in more detail.

Finding meaning Finding meaning in a negative event turns out to be a common (but by no means universal) response to serious illness (for reviews, see Davis, Lehman, & Wortman, 1999; Emmons, Colby, & Kaiser, 1998; Updegraff & Taylor, in press). In Taylor's (1983) interviews with women with breast cancer, 95 percent of the patients had generated some explanation for why their cancer occurred. No specific causal explanation was linked to better psychological adjustment, but the large number of patients who found some sort of explanation suggests that the process of finding some meaning is important.

Although there are many ways to find meaning, one frequently reported way involves finding benefit in adversity. In Affleck & Tennen's (1996) extensive program of research on adjustment to chronic illness, the vast majority of patients reported gains in the strength of their relationships with family and friends, perceptions of positive personality changes, such as greater patience, tolerance, empathy, and courage, and valued changes in life priorities and personal goals (see also Tedeschi & Calhoun, 1996). Interestingly, the perception of benefits from adversity and active attempts to remind oneself of such benefits are linked to other outcomes, such as lower mood disturbance and better health outcomes. For example, people who found meaning in their first heart attack were less likely to suffer a second one (Affleck & Tennen, 1996). Finding meaning in adversity has also been prospectively linked to improved immune function and decreased mortality among HIV-seropositive gay men dealing with the death of their partner (Bower, Kemeny, Taylor, & Fahey, 1998).

Restoring mastery The coping literature provides many striking examples of people's attempts to restore feelings of control and mastery following adversity. Control may take many forms, such as seeing oneself as responsible for the event (Janoff-Bulman, 1989), or it may involve finding new outlets for achieving mastery. For example, people with serious illnesses seem to transfer their control efforts away from the stressor itself (the illness or their prognosis) and toward more manageable aspects of it (the management of symptoms and daily experience). Such selective control attempts – exercising control where one reasonably can and relinquishing control where it is not possible – are linked to superior psychological adjustment, especially as one's condition progresses (Heckhausen, 1997; Thompson, Sobolew-Shubin, Galbraith, Schwankovsky, & Cruzen, 1993).

Patterns of benefit-finding also seem to show this selective pattern. In a study of life changes following a diagnosis of cancer, Collins, Taylor, & Skokan (1990) found that respondents reported both positive and negative changes in five major domains (views of themselves, relations with others, priorities and daily activities, views of the future, and views of the world). Of particular interest, the two life domains that had the greatest ratio of positive to negative changes were those that were most directly controllable by the patients themselves – personal relationships and priorities and daily activities.

Restoring self-esteem In Taylor's (1983) interviews, almost all of the respondents thought they were better off than other women with breast cancer. Self-enhancement through *downward comparisons* to others who are worse off has been found to be a common response to adversity (Buunk & Gibbons, 1997; Wills, 1981). Taylor, Wood, & Lichtman (1983) coined the term *selective evaluation* to describe not only the process of making downward

comparisons, but of selecting dimensions that would allow one to achieve such favorable comparisons. The following excerpts illustrate this process (Taylor, 1983, p. 1,166):

An older woman: "The people I really feel sorry for are these young gals. To lose a breast when you're so young must be awful. I'm 73; what do I need a breast for?"

A younger woman: "If I hadn't been married, I think this thing would have really gotten to me. I can't imagine dating or whatever knowing you have this thing and not knowing how to tell the man about it."

By viewing their situations in ways that emphasized their relative advantage, the vast majority of respondents thought they were adjusting better than other women with breast cancer.

Downward comparisons are not the only way in which social comparison information is used by those coping with adversity. *Upward comparisons* to people doing better than the self play an important role in sustaining hope among people with serious illness (Taylor & Lobel, 1989). Interestingly, as was the case with the selective exercise of control efforts, people seem to be highly skilled in managing their exposure to comparison information to ensure that upward comparisons are encouraging, rather than discouraging. For example, people may avoid upward comparisons on dimensions they cannot change (such as the severity of the illness), but seek them on dimensions they can change (such as ways of coping with the illness; see Aspinwall, 1997, for review).

Learning from adversity: Taking the good and the bad

A second, related area of research on adjustment to adversity examines what people learn from negative life events. Most research on this topic has been conducted from the perspective of Janoff-Bulman's work on *assumptive worlds*. Janoff-Bulman (1989; Janoff-Bulman & Frieze, 1983) argued that we hold favorable beliefs about ourselves, about other people, and about the fairness and meaningfulness of events in the world that remain unquestioned until something negative happens to us. Negative life events challenge and may even shatter such beliefs. In a study of college students, those who had experienced negative life events, such as death of a parent or sibling, incest, rape, a fire that destroyed their home, or a disabling accident, scored lower on beliefs about the benevolence of the world and saw themselves as lower in self-worth than those who had not experienced such events (Janoff-Bulman, 1989).

These findings suggest that adversity has effects that go beyond the event itself to affect core beliefs about the self and the world. How do people cope with such challenges? Janoff-Bulman (1989) argued that one can (1) change one's beliefs, or (2) reinterpret the negative experience to fit one's existing beliefs. There is some evidence that people act in order to restore their worldview. For example, in order to avoid seeing the world as a random place in which bad things happen to good people, people may see themselves as having caused the negative event. To believe that one controlled one's fate means that one can do better next time or take additional precautions. This strategy to restore mastery seems to work, as long as people don't blame less mutable aspects of themselves, such as their character, for the

negative event. In cases in which the event cannot be reinterpreted to match one's beliefs, people may experience persisting distress (Davis, Lehman, & Wortman, 1999).

As suggested earlier, people frequently report both positive and negative changes in response to adversity. However, many authors have questioned the nature and adaptiveness of self-reports of finding benefits in adversity. Do such reports, for example, reflect denial of negative experience or social pressure to report benefit in adversity? These are difficult questions to answer. With respect to the first question, perceptions of benefits seem to be largely uncorrelated with perceptions of the negative impacts of illness (Affleck & Tennen, 1996), a finding that suggests that finding benefit in adversity is not accomplished through denial of its negative aspects. Similarly, in the Collins, Taylor, & Skokan (1990) study, positive and negative changes were reported with nearly equal frequency in three major life domains. A recent experiment by King & Miner (in press) suggests that there are some relatively objective gains from finding benefit in adversity. In a variation of the Pennebaker (1993) disclosure paradigm, college students randomly assigned to write about the benefits they perceived from their experience of traumatic events experienced the same reduction in health center visits relative to controls over the next three months as those assigned to write about negative aspects of such events.

Individual differences and adaptation following adversity

Thus far, I have considered multiple aspects of psychological adaptation and suggested that the process of dealing with adversity involves learning both good and bad things about the self, the world, and other people, and learning that some things are more amenable to control than others. There is increasing interest in the implications of these aspects of adaptation for personality change and growth (Affleck & Tennen, 1996; Carver, 1998; Ickovics & Park, 1998; Tedeschi, Park, & Calhoun, 1998). Interestingly, there seem to be several reciprocal relations between individual differences and the adaptational processes reviewed here. First, certain individual differences, such as optimism, extroversion, and openness to experience, have been linked to finding positive changes in adversity (Affleck & Tennen, 1996; Tedeschi & Calhoun, 1996). In turn, self-reported personal growth from negative events has been linked to subsequent increases in optimism and positive affectivity (Park, Cohen, & Murch, 1996). Second, optimism and self-mastery have been linked to selective control attempts whereby people disengage from active attempts to control uncontrollable problems and report greater acceptance of such problems. It is likely that these two strategies – finding benefits and applying control efforts selectively – serve to preserve the favorable beliefs and expectations that promote them by helping people profit from adversity and by protecting people from repeated failures to exercise control (Aspinwall, Richter, & Hoffman, in press).

Implications of research on adaptation for the study of self-regulation

There are several implications of these findings for understanding self-regulation. The first is that people not only withstand, but may also learn from adversity. They may also make

profound changes in their daily activities, personal priorities, and comparison standards. Thus, the experience of a major negative life event can create changes in the values and priorities that may fundamentally affect the goals people strive to obtain, as well as the standards people use to evaluate their progress (see Biernat, & Billings, 2001).

Understanding the causes and consequences of people's efforts to find meaning, restore mastery, and bolster self-esteem may lead to new insights into ways that people learn from adversity and into the kinds of events that make such efforts more difficult. Research to date suggests that the process of adaptation is considerably more complex than seeing all aspects of one's situation favorably or unfavorably following adversity. Additionally, accumulating evidence about the domains in which people with serious illness report finding benefit and meaning suggests a number of promising domains in which to study self-regulation with respect to important goals. Specifically, expanding the study of self-regulation beyond achievement-oriented tasks to consider such goals as positive relations with others, environmental mastery, meaning in life, and personal growth may give us new information about self-regulation with respect to larger life goals and developmental tasks (Emmons, Colby, & Kaiser, 1998; Ryff, 1989).

The role of social processes in coping, adaptation, and health

If coping is the study of personality under stress, it is just as surely the study of social processes under stress. Research on stress and coping has identified several ways in which the experience of adversity and different ways of coping with it not only alter people's social environments, but also change the ways they use information and assistance from other people. In this section, I will provide a brief overview of research relating social processes to coping, adaptation, and health and discuss the implications of this research for self-regulation more generally.

Social comparison and coping with adversity

Starting with Schachter's (1959) classic studies of fear and affiliation and continuing with present-day research on people facing highly threatening and uncertain situations, social comparisons have been found to play a central role in our attempts to understand what we are facing, how we should feel about it, and what we should do about it (Buunk & Gibbons, 1997). This information is so important to how we understand and manage adversity that simple exposure to someone who has undergone what we are about to face has dramatic health effects. In several field experiments, Kulik & Mahler (1997) found that male cardiac patients awaiting surgery who were randomly assigned to a postsurgical roommate (even one who had had surgery for a different condition) were less anxious and were released sooner from the hospital than patients assigned to a presurgical roommate. In this situation, social comparisons seem to aid people in two critical coping tasks: problem solving and the regulation of emotion. Seeing someone who has experienced surgery may benefit patients by providing information about the sensations and procedures they might experience after surgery (information useful in problem solving) and by providing

living evidence that people do weather surgery (information useful in regulating emotions, such as anxiety).

Such findings have several implications for the study of self-regulation. With few exceptions, the study of self-regulation has been conceptualized as an individual process. In most approaches to goal-directed behavior, social comparisons enter the picture only or primarily when they affect the standards used to judge progress toward a goal. However, it is increasingly clear that social comparison information affects goal-directed behavior far earlier in the chain, starting with decisions about whether to adopt a specific goal (Ruble & Frey, 1991), and continuing with appraisals of tasks and their demands (Aspinwall, Frazier, & Cooper, 1999), perceptions of self-efficacy during the course of task engagement (Bandura & Jourden, 1991), the selection of specific coping methods, and decisions about disengagement (see Aspinwall, 1997, for a review).

Social support and coping with adversity

Social support has been linked through multiple pathways to more active coping efforts, better psychological outcomes, and better health outcomes among people confronting adversity (Cohen & Wills, 1985; Cohen, 1988; Holahan, Moos, Holahan, & Brennan, 1997; Taylor & Aspinwall, 1996). In her classic paper, Peggy Thoits (1986) defined social support as the participation of other people in an individual's coping efforts, including both problem-focused and emotion-focused coping. She outlined four functions of social support: *instrumental* (help with problem-solving efforts, such as rides to the doctor, loans, or other tangible assistance); *information* (also useful in problem solving); *appraisal* (help figuring out what the stressful event is and what it means); and *esteem support* (helping the person feel loved and valued, despite the adverse event). It may be worth noting that these well-documented functions of social support map nicely on to the three major tasks of cognitive adaptation identified by Taylor (1983), namely regaining mastery, finding meaning, and restoring self-esteem.

An important part of this large literature has examined how social support can go awry; that is, how the experience of adversity can lead members of one's social network to avoid the affected person or to interact in awkward and unhelpful ways (e.g. see Dunkel-Schetter & Wortman, 1982; Lehman, Ellard, & Wortman, 1986). As I reviewed earlier, how people cope with adversity, especially how they manage emotional distress and their needs for information and reassurance, also affects the amount and kind of social support they receive (Colby & Emmons, 1997). Such findings highlight the fact that social support is not a static resource, but one that is influenced by coping and also by potential helpers' own fears and beliefs about what would be helpful (Wortman & Silver, 1987). In turn, people who perceive that others are not meeting their needs often react in ways that further the divide between them and their social networks. A final level of complexity is added by emerging evidence that social support may not be a purely external resource. That is, the temperament and personality of the person seeking support seem to be related to both perceived and actual availability and use of social support (Taylor & Aspinwall, 1996). In sum, social support can play an important role in coping with adversity, but people dealing with adversity do not always receive or perceive the support they desire.

Summary

In this brief review of the role of social processes in coping with adversity, I have tried to highlight ways in which social comparisons and social support influence coping, adaptation, and health. In addition to their use as standards for self-evaluation, people use information and assistance from others to inform their coping efforts and to understand and regulate their emotions. Such information is also used to establish goals and priorities among them. In turn, the ways in which people cope with adversity seem to have reliable effects on the availability of social resources. Considering these social aspects of self-regulation may yield a more comprehensive portrait of social influences on goal-directed behavior.

The role of emotions in coping and self-regulation

A final area that is ripe for greater attention in both literatures is the effects of emotions on efforts to deal with adversity. In the coping literature, emotions are typically conceptualized as things that must be managed (as in emotion-focused coping), rather than as major influences on other parts of the coping process. In theories of self-regulation, affect is thought to arise from (Carver & Scheier, 1990) or to inform one's perceived rate of progress toward goals (Martin & Tesser, 1996). However, the effects of positive and negative affect, once elicited, on other aspects of self-regulation are not generally considered.

In the case of chronic illness and other stressors, it will be critical to understand how negative states such as fatigue, depression, uncertainty, anxiety, and pain influence self-regulatory processes. These states may have profound (and likely detrimental) influences on attention to and appraisals of potential problems, selection of coping strategies, and evaluation and integration of new information about problems and the success of one's efforts to manage them. However, there may be ways of expressing and managing negative emotions that have beneficial effects on mental and physical health (Pennebaker, 1993; Stanton, Danoff-Burg, Cameron, & Ellis, 1994). Understanding and cultivating these more adaptive ways may lead to the development of interventions to help people cope with adversity and to prevent the deterioration in social resources that may accompany the display of negative emotions.

Finally, the role of positive emotions in sustaining attention to negative information, fueling goal-pursuit, and generating multiple, creative solutions to one's problems remains understudied. These emotions may be linked to processes such as benefit-finding and reminding, the selective exercise of control, and different kinds of social support in ways that are just beginning to be explored.

Summary and Conclusion

Chronic illness, negative life events, and other stressors represent an important set of circumstances in which to study personal and social factors in self-regulation, as resources are taxed

over long periods of time; as valued goals, self-beliefs, and worldviews may be disconfirmed, reaffirmed, or changed; as social ties may be strengthened or weakened; and as negative and positive emotions may influence appraisals, coping efforts, and social behavior. Importantly, all of these things are going on at once, most often in life domains that are highly important to people.

What can be gained by considering potential interrelations between the stress and coping and self-regulation literatures? Some of the suggestions I've made here might broaden scope of inquiry of both literatures, but at the same time provide increased precision. First, reconceptualizing coping as goal-directed behavior might provide insight into the nature of stress, the kinds of coping strategies employed, and their effects on both the problem and the person. Second, a focus on how psychological and social resources "work" may extend the study of individual differences beyond the question of *which* factors are linked to psychosocial and health outcomes to ask *how* such relations are obtained. Greater attention to conceptual models of self-regulation, including research on psychological resources, attention to negative information, emotional regulation, problem solving, and procedural knowledge, would likely elucidate why certain individual differences are so reliably related to good or poor outcomes over time. Such models may also provide insight into the processes through which personality is maintained over the lifespan.

Third, research on self-regulation might profit from greater attention to both the processes and outcomes of psychological adaptation to stressful life events. People who experience adversity change their comparison standards, value different life domains than before, and often gain valuable knowledge about themselves, others, and the world as a result of the illness. They may change their goals, change the meaning or importance they accord to different goals, or make more nuanced distinctions between controllable and uncontrollable aspects of goals. These creative, adaptive changes to find meaning, exercise mastery, and restore self-worth have documented links to psychological well-being and, increasingly, to physical health that merit increased research attention. Importantly, these changes do not take place in a social vacuum, nor are they independent of the nature of the stressor. It will continue to be important to examine different kinds of life events and social responses to them that make it more or less difficult to find meaning, to exercise mastery, or to restore self-worth.

Fourth, greater attention to social processes, such as social comparison and social support, may provide insight not only into how people manage adversity, but also how people select, pursue, and disengage from different goals. Increased attention to the social interactions of people managing adversity may shed light on the processes that maintain, build, or deplete social resources, as well as those that generate conflictual interactions that are themselves potent sources of stress. Finally, greater attention to the role of both positive and negative emotions in the process of detecting and managing negative events and information may increase our understanding of emotions in such critical areas as problem solving, goal pursuit, and the maintenance or depletion of personal and social resources.

In conclusion, integrating the study of coping with adversity with the study of self-regulation may increase our understanding of what people are trying to do in their lives, what is stressful to people, why particular coping strategies are enacted, and how ways of dealing with adversity affect all areas of life.

NOTE

- 1 This review will necessarily be selective, rather than comprehensive. For reviews of major topics in stress, coping, adaptation and health, see Aspinwall & Taylor (1997); Basic Behavioral Science Task Force (1996); Buunk & Gibbons (1997); Cohen (1988); Friedman (1990); Kaplan (1996); Lazarus (1990); Pennebaker (1993); Revenson (1994); Suls & Harvey (1996); Taylor & Aspinwall (1990, 1996); Taylor, Repetti, & Seeman (1997); Tedeschi, Park, & Calhoun (1998); and Wortman & Silver (1987).

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