Journal of Social Issues, Vol. 54, No. 2, 1998, pp. 245–266

Resilience and Thriving: Issues, Models, and Linkages

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This article addresses distinctions underlying concepts of resilience and thriving and issues in conceptualizing thriving. Thriving (physical or psychological) may reflect decreased reactivity to subsequent stressors, faster recovery from subsequent stressors, or a consistently higher level of functioning. Psychological thriving may reflect gains in skill, knowledge, confidence, or a sense of security in personal relationships. Psychological thriving resembles other instances of growth. It probably does not depend on the occurrence of a discrete traumatic event or longer term trauma, though such events may elicit it. An important question is why some people thrive, whereas others are impaired, given the same event. A potential answer rests on the idea that differences in confidence and mastery are self-perpetuating and self-intensifying. This idea suggests a number of variables whose role in thriving is worth closer study, including personality variables such as optimism, contextual variables such as social support, and situational variables such as the coping reactions elicited by the adverse event.

The theme of this issue of the *Journal* is that the experience of adversity (serious stress or trauma, physical or psychological) can sometimes yield benefits to the person who experiences it. My contribution is to make conceptual distinctions among several related-but-not-identical experiences and to raise some issues about how to best conceptualize the topic under discussion. In the latter context I also consider one way of approaching the question of why some people seem to benefit from adversity whereas others do not. Finally, I review some constructs used in other areas of psychology that seem relevant to this topic.

Preparation of this article was facilitated by NCI grant CA64710.

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Responses to Adversity: The Domain of Possibilities

When a physical or psychological downturn occurs in response to adversity, it has at least four potential consequences (O'Leary & Ickovics, 1995).[1] One possibility is a continued downward slide (cf. Aldwin, 1994) in which the initial detrimental effect is compounded and the individual eventually succumbs (Figure 1). A second possible outcome is a weaker version of this one: The person survives but is diminished or impaired in some respect. A third possible outcome is a return to the preadversity level of functioning, a return that can be either rapid or more gradual. The fourth possibility—the focus of this collection of articles—is that the person may not merely return to the previous level of functioning but may surpass it in some manner.

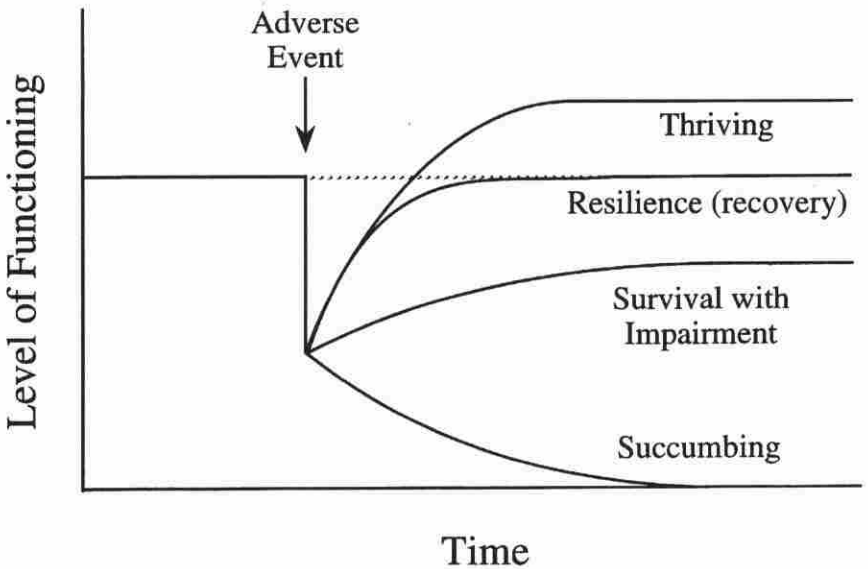

Fig. 1. Potential responses to trauma. A downturn (physical or psychological) in response to a traumatic or stressful event can be followed by a downward slide and eventual succumbing, by survival in an impaired condition, by recovery to the prior level of functioning, or by the eventual attainment of a level of functioning superior to that displayed earlier—thriving. From "Resilience and Thriving in Response to Challenge: An Opportunity for a Paradigm Shift in Women's Health," by V. E. O'Leary and J. R. Ickovics, 1994, *Women's Health: Research on Gender, Behavior, and Policy, 1,* p. 127. Copyright 1994 by Lawrence Erlbaum Associates. Adapted with permission.

[1] I make no distinction here between a discrete, time-bounded adverse event and a prolonged period of adversity. Although there are important differences between those experiences, I think the points made here apply to both cases.

O'Leary and Ickovics (1995) used the term *thriving* to refer to this fourth possibility (see also O'Leary, this issue). In discussing this concept, they argued for the broader utility of a model that postulates more than homeostatic health maintenance. They argued that theorists, researchers, and practitioners need to recognize that adversity can eventually bring about benefits (see also Affleck & Tennen, 1996; Aldwin, 1994; Park, Cohen, & Murch, 1996; Tedeschi & Calhoun, 1995). That is, sometimes the experience of adversity promotes the emergence of a quality that makes the person better off afterward than beforehand.

This principle is presumed to apply both to psychological and to physical well being. Most of the articles of this issue deal with thriving as a psychological phenomenon, but we should give at least brief consideration to how the concept applies to physical well being. How can adversity lead people to have better health, if they were healthy before the onset of the adversity?

A moment's reflection reveals that there are at least a couple of ways for this to happen. For example, a child who contracts chicken pox emerges from the experience with an immunity to subsequent chicken pox. Thus, in a sense this child's health is better afterward than it was before falling ill. Similarly, a sedentary person with poor nutritional habits who, after a serious illness, becomes dedicated to exercise and healthy eating is in better health afterward than beforehand. There are limits, however. Even an excellent athlete can improve his or her condition only to some asymptote. Perhaps there are analogous limits to psychological thriving as well.

Definitional Issues

To evaluate the possibility that a person can be better off after adversity than beforehand requires us to be as clear as possible in our discussions. I offer a few suggestions in that regard. I suggest that the term *resilience* be reserved to denote homeostatic return to a prior condition (which I believe this term is commonly understood to imply). I suggest we take care to use another term—and *thriving* seems as good a candidate as any—to refer to the better-off-afterward experience.

Another distinction should also be upheld, this one concerning the situations that people confront. Highly stressful circumstances are usually characterized by the possibility of harm. Sometimes, however, there is also an opportunity for gain. These conditions are often distinguished from each other by labeling the former *threat* and the latter *challenge* (Lazarus, 1966; Lazarus & Folkman, 1984). These conditions differ from each other conceptually, but they often co-occur. This has led several authors to propose that the two conditions fuse in the experience of *crisis* (Erikson, 1968; see also O'Leary & Ickovics, 1995).

Although it's important to recognize that these two conditions can co-occur, it is also important to keep the concepts (and the labels) distinct from one another. Sometimes stressors—especially traumatic events—begin as pure threats (or losses). Only later (if at all) does the sense of challenge emerge. To treat threat and

challenge as equivalent and interchangeable blurs potentially important issues. Beyond the issue of conceptual clarity, honoring this distinction also suggests research hypotheses. For example, there may be merit in examining the time course of traumatic events and their aftermath, to determine whether there is a predictable time course within which challenge emerges from an experience that initally was only threatening or damaging.

Virtually by definition, thriving is a response to challenge (because thriving represents gain), rather than a response to threat (minimization of loss). This raises difficult questions. Where does the sense of challenge come from when a trauma is experienced? How can one account for the emergence of this appraisal from an event that initially is only tragic?

Conceptions of Thriving

There are several alternative ways to construe the process of benefiting from an encounter with adversity, and they have somewhat different implications. Following are abstract depictions of three alternatives that appear to apply equally well to physical and psychological thriving.

Desensitization

Let's begin by looking more closely at the experience of resilience, the capacity to recover from a downturn to a former state of relative well being. In itself, it is a homeostatic phenomenon. Even here, however, the adverse event can potentially have at least two kinds of positive effects on the person's response when later encountering another instance of the same sort of adverse event. Both effects have overtones of the thriving construct, despite the fact that the process within which they occur is homeostatic.

One possibility is that after one or more exposures to a traumatic stressor, the person becomes desensitized to its occurrence (Figure 2A). The first occurrence produces a downturn, but repeated occurrences produce the downturn to lesser and lesser degrees. This is the psychological equivalent of a dose of chicken pox. Having experienced and dealt with the adversity once, the person has an acquired "immunity" (or partial immunity) to its next occurrence. As with chicken pox, the added value is not a higher level of *constant* functioning, but rather a resistance to a downturn from a subsequent instance of the adversity.

Enhanced Recovery Potential

Another model for adaptation to adversity is to assume a change in the speed of recovery from the stressor. After the first experience, there is a gradual return to baseline. However, the initial exposure may enhance a person's ability to *recover* from

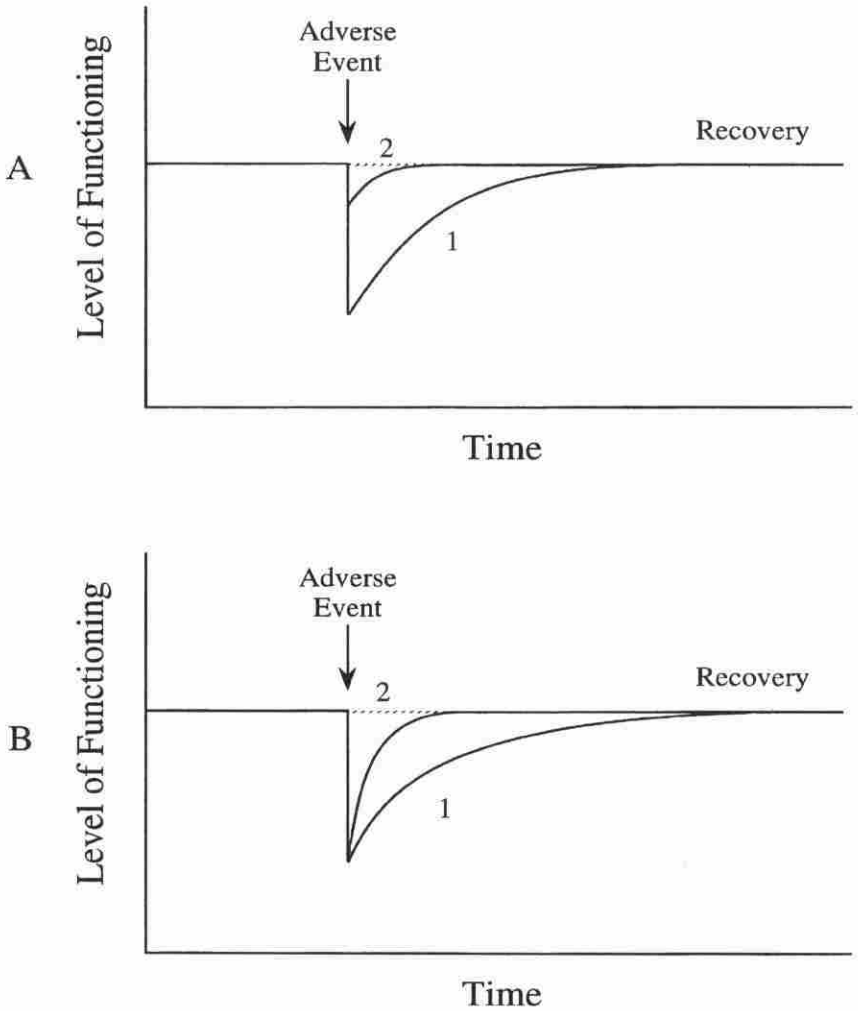

Fig. 2. Two conceptions of adaptation. (A) Initial exposure to the adverse event produces downturn and recovery (line 1); with repeated exposures, the downturn is diminished (line 2). (B) Initial exposure to the adverse event produces downturn and recovery (line 1); with repeated exposures, the recovery is quicker (line 2).

the adverse impact should the stressor recur. After a subsequent downturn, then, the return to baseline may be quicker (Figure 2B).

This possibility differs from the preceding case in two ways. It assumes that the subsequent stressor retains its disruptive character, and it assumes that experience renders people more efficient at repairing the disruption than they were before. To put it more simply, in this model they're hit as hard, but they bounce back faster.

Taking It to a Higher Level

Another possibility, indeed the possibility suggested most directly by Figure 1, is that the person who experiences thriving comes to function at a continuing higher level than was the case before the adverse event. Sedentary people who acquire physical fitness are functioning at a higher level than they previously did. People who come to appreciate fulfilling aspects of life on a continuing basis after a personal trauma are also functioning at a higher level than they previously did. In this model, something about the experience of the adversity and its aftermath has taken the person to a higher plane of functioning.

How do we determine whether thriving of this sort has occurred? It can be easy to evaluate in certain cases for which there are objective criteria. The previously sedentary person can be placed on a treadmill to show objectively that he now can perform at higher levels than he did last year. People who previously led sheltered lives, or lives with little sense of purpose, can affirm that they've started courses in painting and sailing, or that they've joined groups of others with like interests, and that their lives now are filled with social interactions that were lacking before the traumatic event.

Other cases are harder to evaluate, though, and one must be wary about concluding too readily that a particular outcome implies thriving. Sometimes people who experience adversity report later that the experience resulted in a greater acceptance of themselves or others (or the world); some people report a change in personal philosophy or orientation to life, changes in priorities, and so on (e.g., Collins, Taylor & Skokan, 1990; Dow, Ferrell, Leigh, Ly, & Gulasekaram, 1996; Ferrell, Dow, Leigh, Ly, & Gulasekaram, 1995; Fromm, Andrykowski, & Hunt, 1996; Kahn & Steeves, 1993; Kurtz, Wyatt, & Kurtz, 1995; Wyatt, Kurtz, & Liken, 1993). This sort of subjective change is hard to evaluate. Such changes might be seen by some observers as moving to a higher plane of functioning, but others would disagree.

In particular, at least some of these changes hint at accommodation, a shift to being less demanding of the world, a blunting of expectations (cf. McMillen, Zuravin, & Rideout, 1995). Although such accommodation might very well be adaptive for the person (Rothbaum, Weisz, & Snyder, 1982), it is not obvious that it constitutes thriving per se.[2] Some will disagree, but I believe change that consists solely of accommodation or scaling back of expectations should not be considered as evidence of thriving.

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[2] A separate problem with this sort of outcome is that responses of this form are harder than are behavioral responses to distinguish from rationalization or dissonance reduction, which would not be regarded as thriving under any reasonable definition of the term. Although a given observed positive response to trauma may actually be rationalization, or dissonance reduction, or just a positive reframing of the experience, I will disregard this possibility throughout this article.

I recognize that there is a gray area (potentially very large) in which accommodation may occur as part of skill acquisition. That is, a person may learn to accept conditions that cannot be changed, as part of learning to discriminate between situations that cannot be changed and those that can, and of acquiring psychological and behavioral tools for changing the latter. Without developing lower expectations for unchangeable circumstances, that skill won't be as finely honed as it otherwise would be. It can be very hard to ascertain that accommodation in such a case is co-occurring with changes that truly reflect thriving, but such co-occurrence certainly is possible.

Features of Psychological Thriving

The descriptions of thriving in the preceding section were framed in a very abstract manner. A central feature in each view, however, was the assumption that the person who experiences the traumatic or stressful event benefits or gains in some way from the experience and can apply that gain to new experiences, leading to more effective subsequent functioning. What is the nature of the gain in concrete terms, with respect to psychological thriving? Beyond habituation, there are several possibilities, any of which may fit with any of the three conceptualizations just outlined.

Skills and Knowledge

People sometimes emerge from disruptive and even traumatic events with newly developed skills. To get through the experience successfully, they were forced to learn something they hadn't had to know how to do before. Sometimes the skill bears on managing the external world, such as dealing effectively with bureaucracies (or roofing contractors, or obtuse medical staff). Sometimes the skill bears on handling internal matters, as in affect management (Gross, 1998). The "skill" may be an actual skill or it may be an enhanced knowledge base: knowledge of the nature of a problem domain, or knowledge of resources available to people confronting such problems.

Whatever skill or knowledge the person acquires may be applicable to future problems (Aldwin, Sutton, & Lachman, 1996). When people master a new skill, they are more fit to deal with an unpredictable world. When people develop new pathways to get from here to there, they are more flexible in confronting the unknown. These flexibilities can even build on each other.

Confidence

Along with the ability to do something you couldn't do before comes the psychological sense of mastery (Aldwin, 1994; Moos & Schaefer, 1986). Along with

having gotten through a difficult or painful experience can come a sense of confidence about the future ("I survived this, I can deal with other hard things too"). Having this confidence can in turn make a subsequent experience easier to approach and deal with (Affleck, Tennen, & Rowe, 1991; McMillen et al., 1995).

It can be hard to disentangle the impact of confidence from the impact of skill development. Sometimes the newly acquired skill provides the basis for the confidence. Sometimes confidence doesn't depend on the acquisition of new skills but arises merely from the survival of the adverse event (cf. Wolff, Friedman, Hofer, & Mason, 1964). Regardless of its source, confidence can be a critically important variable in keeping the person engaged in the effort to cope (Bandura, 1986; Carver & Scheier, 1998). Remaining engaged in the effort is itself an important determinant of eventual success.

Strengthened Personal Relations

The points made in the preceding paragraphs concern growth within the person, either in actual capabilities or in the anticipation of successes. Certain kinds of stressful experiences have social consequences, as well. If a person experiencing a traumatic event finds that help from others is readily available—that the significant others in his or her life can be counted on—the result can be a positive change in the sense of the relationships involved. The person may experience a strengthening of the sense of security in those relationships, or even of relationships in general.

A theme that has drawn a number of writers in recent years is that adult social relations can be viewed through the lens of early childhood relations—adult bonds as secure versus insecure attachments (Bartholomew & Perlman, 1994; Hazan & Shaver, 1994). In general, people who write on this topic tend to agree that adult attachments are malleable. Perhaps, then, the person who experiences ready availability from others during a period of adversity acquires an enhanced sense of security in relationships (cf. Aldwin, 1994; Moos & Schaefer, 1986; Simpson & Rholes, 1994). In principle, this would permit the person's future exploration to operate from a more secure base.

Conceptual Issues

Given that psychological thriving occurs in at least some people's experiences, in more or less the form portrayed in the preceding sections, several conceptual issues arise.

Is Thriving Different From Any Other Growth Experience?

Psychological thriving appears to represent a kind of growth: growth in knowledge, growth in skill, growth in confidence, greater elaboration and differentiation

in one's ability to deal with the world at large. If thriving is simply growth in response to an adverse event, the question arises whether the phenomenon we are calling thriving differs in principle from any other growth experience. Something that seems to distinguish it from other growth events is that this event is occurring in circumstances in which—on the face of it—growth is unexpected, circumstances that push in the opposite direction.

On the other hand, this depiction may not really be so accurate after all, in two respects. First, it may not portray the nature of growth accurately. It might be argued that growth occurs only in response to stress. Muscle development occurs when a muscle is systematically worked beyond its ability to respond well. Without that stressing, there's no growth and development in strength. Similarly, cognitive skills develop precisely because the person's existing understanding of reality is too limited to handle the person's current experiences. It takes a mismatch between the person and the world—a disequilibration (Piaget, 1963, 1971) or a failure of prediction (Kelly, 1955)—to force the growth and elaboration to occur (see also Ruble, 1994).

The second sense in which my characterization may have been misleading pertains to the extent of adversity, the extent to which circumstances press in the opposite direction. I said earlier that thriving stems almost by definition from challenge: the perceived opportunity for gain. This suggests that the growth now under discussion can come only if the circumstance is malleable enough to permit gain. If the situation is such that only harm can possibly occur (no possibility for gain), the growth that constitutes thriving would not be possible.

This line of thought leads to the conclusion that thriving happens only when circumstances permit forward motion of some sort. Muscle development requires working the muscle, but it also requires nourishment and sheltered time to consolidate and rebuild. Without time to rest, the work of exercise is counterproductive. Similarly, unless there is evidence that a new mental organization predicts reality better than the previous one (thus permitting consolidation), the new organization doesn't maintain itself (Goldin-Meadow & Alibali, 1995; Ruble, 1994).

These considerations suggest that thriving reflects an extreme case of the same process that otherwise is viewed as growth. It is extreme in the sense that it occurs in circumstances that are at the outer limits of tolerability for threat and that have just enough flexibility to permit the experience of challenge. If circumstances are even more extreme, growth—thriving—may be precluded. At some point there may be a watershed among reactions, a point of bifurcation at which thriving stops and instead there is only impairment and debilitation.

Trauma, Thriving, and Reorganization of the Self

How does this reasoning fit with other ideas on growth and change? Tedeschi and Calhoun (1995) have argued that trauma can provide a context for personal transformation. Perhaps that's because trauma changes the current situation so

much that growth is accelerated (if indeed it occurs at all). Thus, responses to trauma may provide a clearer window on processes that take place in many less extreme circumstances but normally are relatively hidden from view.

This idea is also reminiscent of Kelly's (1955) discussion of changes that take place in people's construct systems. Kelly distinguished between elaboration of a construct system (gradual growth) and the sudden reorganization of the system that sometimes occurs under conditions where there is a massive failure of prediction (usually, though not always, involving a traumatic event). If the reorganization that took place were adaptive (which was implicit in Kelly's argument), it would resemble thriving. The changes are in some respects the same as normal evolution of the construct system, but they are occurring in a sudden rather than gradual pattern.

Reorganization and Therapy: A Dynamic Systems View

This depiction of positive responses to trauma also resembles another view on the reorganization of the self—this time through therapy, rather than through trauma. This view of therapy rests on dynamic systems theory as an orienting framework (Hayes & Strauss, in press; Mahoney, 1991). Dynamic systems theory has a number of themes that go well beyond the scope of this discussion (see, e.g., Alligood, Sauer, & Yorke, 1997; Kelso, 1995; Thelen & Smith, 1994; Vallacher & Nowak, 1994, 1997; van Geert, 1994), but one of its themes is that the behavior of a system over time can be characterized in terms of a landscape of "attractors," configural regions in which the system spends most of its time.

Attractor landscapes are sometimes portrayed in drawings of ridges and attractor basins (Figure 3). A metaphoric gravitational downward force tends to hold the system within a given basin once it has entered it. Attractor basins have varying degrees of stability (portrayed by their depth relative to their immediate surroundings), and they also have varying degrees of optimality (portrayed by their depth relative to the vertical axis). The landscape can be used at many different levels of analysis. Here I use it to stand for the person's overall life space, the person's total adaptation to the circumstances of his or her life. Various attractor basins may provide partial adaptations, but only one of the basins in Figure 3 reflects an adaptation that is optimal.

In the dynamic systems view, the broad goal of therapy is to move the person from a "local minimum" in his or her overall life space (the attractor basin now occupied) to a location that's closer to the optimal (Figure 3). That is, the goal is to deflect the person into a new attractor in which an existing problem is more fully resolved or in which global adaptation is more broadly positive than it now is. Doing this requires reorganization of what now exists. Inducing a reorganization is not easy. It may require some heavy shaking of the person's life space to bump the person over the edge of the attractor basin currently occupied. The change, if it happens, may be relatively sudden.

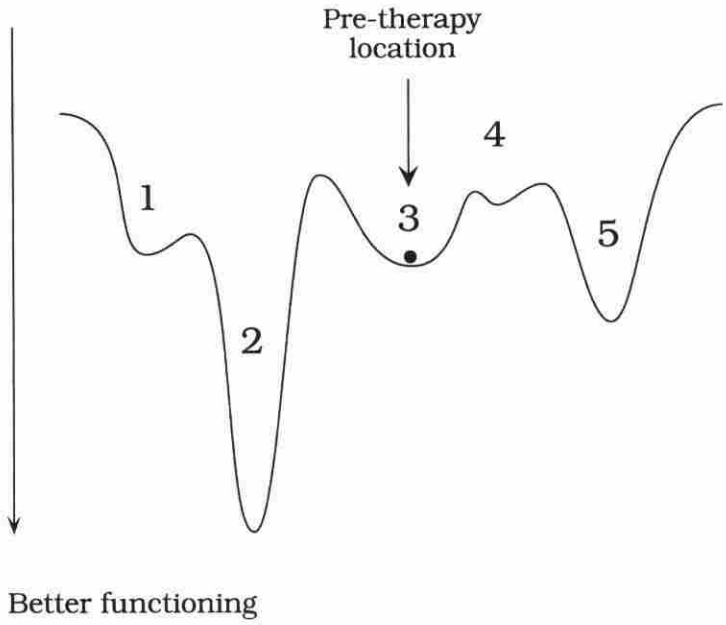

Fig. 3. The goal of therapy from a dynamic systems perspective: moving the person to a new attractor basin in which overall adaptation is better than it presently is (better depicted as lower). Achieving this requires a shakeup of the system, destabilizing the person's functioning, extricating the person from the current basin. This permits (though doesn't ensure) the possibility of arriving at a better attractor (2). Sometimes the result, though a change, is not an appreciable improvement (5). Potentially the result can even be worse than the starting status (4). From *On the Self-Regulation of Behavior* (p. 308), by C. S. Carver and M. F. Scheier, 1998, New York: Cambridge University Press. Copyright 1998 by Cambridge University Press. Reprinted with permission.

It has been suggested that successful therapy involves precisely this kind of process (Hayes & Strauss, in press; Mahoney, 1991). Certain kinds of experiences in therapy jostle or destabilize the system—the person (cf. Heatherton & Nichols, 1994; Miller & C'deBaca, 1994). If the system is sufficiently destabilized, it can bounce into a reorganization. The reorganization won't happen, though, unless the system is destabilized enough to get it free of the current attractor.

Getting over the boundary may be prompted by a general failure in the person's adaptation to his or her life space. Indeed, rising over the boundary may *constitute* such a failure, without which major change is impossible. (For more detailed discussion, see Carver & Scheier, 1998; Hayes & Strauss, in press; Kuhn, 1995.) This general failure of adaptation might in itself be viewed as a traumatic experience. Such a construal of the effect of successful therapy would place the therapy experience under the same conceptual umbrella as the experience of thriving after trauma.

Thriving Versus Kindling

Thus far in this article I've focused on resilience and thriving, positive responses to adverse events. However, clearly not every person who experiences adversity has these sorts of experiences (Aldwin, 1994). Indeed, for some people distress leads to further sensitization and enhanced vulnerability to subsequent distress (cf. Suomi, 1991). This process has been likened to the use of kindling to start a fire, which then becomes more and more intense (Kramer, 1993). If some people experience deterioration in their responses to adversity and others respond instead with growth, the following question becomes critical: What differentiates these sets of people from each other?

One answer has been suggested by Aldwin and Stokols (1988; Aldwin, 1994; see also chap. 13 of Sapolsky, 1994; Turner & Avison, 1992). They proposed that a deviation-amplifying feedback process creates a maladaptive spiral for some people and an adaptive spiral for others. In their view, individual differences in initial mastery are the starting point for subsequent movement in two different directions. Those high in mastery cope with adverse circumstances through instrumental activities. They tend to master the situation effectively, appraise their experience as beneficial, and increase the sense of mastery with which they approach subsequent situations. Those who begin with a lower sense of mastery cope by avoidance and escapism. They fare more poorly, appraise their experience as detrimental, and suffer further depletion in the sense of mastery.

I agree with the psychological sense of this model: that people with a sense of confidence and mastery move onward and upward and people with sufficient doubt suffer continued or repeated declines. My slant on this bifurcation is based on the belief that high-mastery or confident people are continually trying to succeed in efforts to overcome the adversity and that low-mastery people are vulnerable to giving up the attempt (Carver & Scheier, 1981, 1998).

I have a different view of the underlying metatheoretical mechanism, however. I don't believe either group is engaged in a discrepancy-amplifying loop. Rather, I believe confident people are in a discrepancy-*reducing* loop, one with optimal functioning as its desired end point, in which people are struggling to pull themselves upward to a better position (cf. the upward drive postulated in social comparison theory by Festinger, 1954, and the upward drive posited by Adler, 1927). I see doubtful people as displaying a giving-up response—a turning away from efforts—that deepens over recurrences.

A Catastrophe Model of This Bifurcation

Regardless of the underlying dynamic, it seems likely that the onward effort and the giving-up tendency both are exaggerated by increases in the importance of the situation the person encounters (Carver & Scheier, 1998). It may be argued as

well that when important events recur, whichever response is evoked initially becomes even more ingrained. The cases now under consideration—traumatic or major adverse events—seem to fit into the category of high-importance events. Thus, this line of thought may be applicable to individual differences in responses to trauma.

The response exaggeration I think follows from importance has two aspects that can be depicted in the form of a cusp catastrophe (Figure 4). A full description of the characteristics of the catastrophe is beyond the scope of this article (for more detail see Carver & Scheier, 1998), but several points about it can be made fairly easily, while indicating its applicability to the case at hand. In this application, there are two predictor variables (confidence and importance) and an outcome variable (engagement—effort versus giving up). In this depiction, when importance increases, the tendency of high confidence to produce high effort increases (area A on Figure 4). Similarly, as importance increases, the tendency of low confidence to produce giving up increases (area B on Figure 4). The divergence of these two tendencies is one kind of exaggeration that follows from increases in importance.

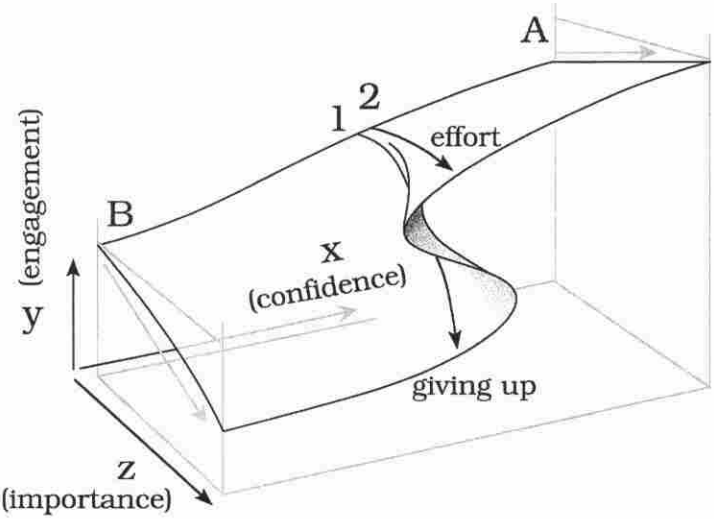

Fig. 4. Three-dimensional depiction of a cusp catastrophe. Variables *x* and *z* are independent variables, *y* is the dependent variable. In the example under discussion, *x* is confidence, *z* is importance, and *y* is engagement (effort versus giving up). When confidence is high (area A), an increase in importance produces a rise in effort. When confidence is low (area B), an increase in importance produces a loss in effort. This surface is also sensitive to initial position. Where *z* is low, points 1 and 2 are nearly the same on variable *x* (confidence) and they relate to similar levels of engagement. If you project these points "forward" on the surface (that is, increase *z*, importance), you find that they move in parallel until the cusp begins to emerge. The lines are separated by the formation of the cusp, and then project to completely different regions of the surface, expressing strong effort and giving up of effort, respectively. From *On the Self-Regulation of Behavior* (p. 297), by C. S. Carver and M. F. Scheier, 1998, New York: Cambridge University Press. Copyright 1998 by Cambridge University Press. Adapted with permission.

Hysteresis and a Second Kind of Exaggeration

The second kind of exaggeration rests on another feature of the catstrophe surface, which is a little more complicated to explain. Increasing the degree of importance induces a bifurcation of responses into categories of continued effort versus giving up. Further, as one moves from the back edge of the surface toward the front, a zone of what's called *hysteresis* develops (Figure 5). This is a region of folding and overlapping in the surface, such that two values of *y* exist for a given value of *x*. (No points exist on the dashed portion of Figure 5, only on the top and bottom.)

Discussions of the cusp catastrophe often focus on consequences of movement on the surface from one area to another. Where you start has important consequences. Return to Figure 4 and consider points 1 and 2 on the back edge of the surface, where importance is low. These points are very close together on the confidence dimension. Thus, at low importance, they predict similar levels of effort. Now consider what happens if importance increases and these points are projected directly forward on the surface. They follow paths that quickly diverge, ending up at the two separate areas of the surface. Now the slight differences in confidence predict very different levels of effort.

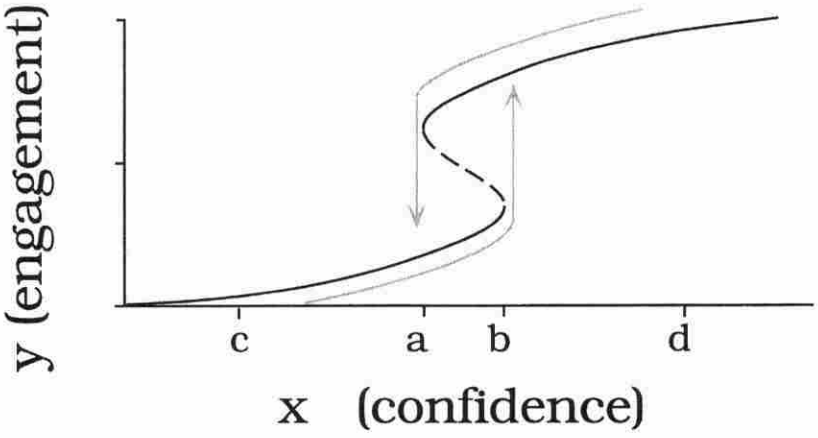

Fig. 5. Hysteresis. A cusp catastrophe exhibits a region of hysteresis (between values *a* and *b* on the *x*-axis), in which *x* has two stable values of *y* (the solid lines) and one area where values do not exist (the dotted line that cuts backward in the middle of the figure). Traversing the zone of hysteresis from the left of this figure results in an abrupt shift (at value *b* on the *x*-axis) from the lower to the upper portion of the surface (right arrow). Traversing the zone of hysteresis from the right of this figure results in an abrupt shift (at value *a* on the *x*-axis) from the upper to the lower portion of the surface (left arrow). Thus, the shift between portions of the surface occurs at two different values of *x*, depending on the starting point. From *On the Self-Regulation of Behavior* (p. 291), by C. S. Carver and M. F. Scheier, 1998, New York: Cambridge University Press. Copyright 1998 by Cambridge University Press. Adapted with permission.

Another important type of movement to consider is shift in confidence from lower to higher, or vice versa, when importance is already relatively high. In this case, the region of hysteresis creates a discontinuity in the effort outcome: If the shift in confidence continues to the far edge of the region of hysteresis (from either direction), there is an abrupt jump from one surface to the other (Figure 5). However, the shift from bottom to top (from giving up to effort) occurs at a different point on the confidence dimension than does the shift from top to bottom (from effort to giving up). More specifically, once a region of hysteresis has emerged, a higher level of confidence is required to *start* trying (to shift from not trying to trying) than is required to *keep* trying (to remain on the upper surface in Figures 4 and 5).

Moreover, as importance increases further, the region of hysteresis becomes wider. Figure 6 shows a projection downward of the two edges of the region of hysteresis as it develops over increasing levels of z. As z increases, the region of hysteresis continues to expand across the range of x. The right arc in Figure 6 shows the point where (in the example under discussion) a person who is doubtful about success begins to exert meaningful effort (jumps from the lower portion of the

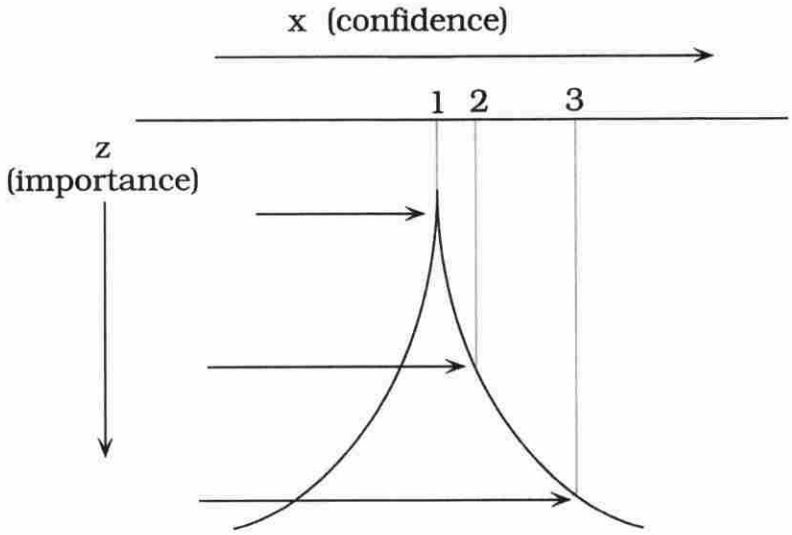

Fig. 6. The bifurcation set of the cusp catastrophe in Figure 4. This is essentially a downward projection of the two edges of the region of hysteresis onto a flat plane. It shows that as importance increases and the degree of hysteresis increases correspondingly, a person on the lower surface must attain a higher level of confidence (move farther to the right on the x-axis) to shift to the top surface as in Figure 5. With relatively low importance, the person must reach only point 1 on the confidence dimension to do so, but as importance increases, the confidence needed continues to increase, to points 2 and 3 and beyond. From *On the Self-Regulation of Behavior* (p. 298), by C. S. Carver and M. F. Scheier, 1998, New York: Cambridge University Press. Copyright 1998 by Cambridge University Press. Reprinted with permission.

catastrophe surface to the upper portion). As the figure shows, with increases in importance (z), the person must have higher and higher levels of confidence before serious effort occurs. If the circumstance is indeed very important, this means that the doubtful person is stuck in giving-up mode, even when success is (objectively) fairly likely.

Although the corresponding effect for confident persons is not illustrated directly in Figure 6, the effect is symmetrical. That is, with increases in importance (z) it takes more and more doubt (the left arc in Figure 6) to cause a confident person to give up. In effect, this person is stuck in effort mode, even when failure is (objectively) fairly likely. This figure thus recaptures the sense of the Aldwin and Stokols (1988; Aldwin, 1994) idea that both mastery and failure can have a self-perpetuating and even self-intensifying character.

Linkages: Variables That May Relate to Thriving

The concept of thriving (and failure to thrive) relates readily to many concepts in the psychological literature. Indeed, I've already hinted at several constructs that may be relevant to the thriving experience. The twin perspectives of personality and social psychology bring to bear two distinct angles on this question. From personality psychology, many individual difference variables have conceptual links to general themes of persistence, resilience, and thriving. From social psychology come discussions of situational or contextual variables that may serve similar functions. These all would seem to represent variables worth looking at more closely in research on thriving as a phenomenon.

Individual Differences

From the point of view of the catastrophe model just outlined (and from other views as well), the fundamental issue that differentiates thriving from failing would seem to be whether the person remains engaged in the struggle to prevail. Many dispositional characteristics bear on this issue. Theorists have proposed a wide range of personality qualities that embody differences in such tendencies. These may be regarded as a family of interrelated variables that have much in common, though deriving from different theoretical traditions.

It is not my purpose here to compare these constructs to each other, but simply to provide a sense of the kinds of personality qualities that may matter in this context by noting a few examples. My own work on this topic focuses on optimism versus pessimism, the tendency to expect the best or worst in one's future (Scheier & Carver, 1985, 1992; Scheier, Carver, & Bridges, 1994). The relevance of this construct to the point under discussion is obvious, as is that of constructs such as self-mastery (Pearlin & Schooler, 1978), hopelessness (Beck, Weissman, Lester, & Trexler, 1974), hardiness (Kobasa, Maddi, & Kahn, 1982), hope (Snyder, 1994;

Snyder et al., 1991), and self-efficacy (Bandura, 1986). These constructs all relate to continuing efforts versus giving up, though the reasoning behind them varies somewhat. There is evidence that each of these predicts resilience. Evidence of thriving is sparser but seems worth searching for in the future.

Another person variable suggested by the preceding discussion as relevant to thriving is adult attachment. Security of attachment to significant others establishes the sense of a secure base and safe haven as resources that permit exploration. Many measures to assess this aspect of personality have been developed (see Brennan, Clark, & Shaver, 1998; Carver, 1997). Although these measures focus on the interpersonal, the general theme remains the same as for the family of constructs just described. Specifically, the perception of solid relationship resources provides a basis for productive, active, and effortful responses; if perceptions of these resources fall too low, there is a disengagement from efforts.

Another set of qualities that might be thought of as being either personal or contextual is the coping responses that people engage when an adverse event occurs. These responses are personal, in the sense that most studies of coping simply assess people's spontaneous reactions, thus exerting no control over what reaction occurs. In principle, however, the responses are available for use by anyone who engages them.

Evidence suggests that problem-focused coping, positive reframing, and even acceptance of the reality of the existence of a problem can foster better outcomes in dealing with the problem (Aldwin, 1994; Carver et al., 1993; Lazarus & Folkman, 1984). An even larger accumulation of evidence indicates that avoidance coping —indicants of disengagement of effort—can foster poorer outcomes. Although the dependent variables in this body of work tend to reflect resilience more than thriving, the pattern suggests the potential utility of looking at coping responses and thriving, based on the dichotomy between engagement and disengagement.

Situational Constraints That Impede or Foster Thriving

Individual differences pertaining to engagement and disengagement of effort are easy to point to. In the same way, however, any situational variable that fosters continued engagement of effort, any situational condition that promotes growth, should also foster thriving.

An obvious example of such a contextual variable is the existence (or perception) of social support resources. A variety of evidence indicates that perceptions of adequate social support are associated with better adaptations to stressful circumstances (e.g., Cohen & Wills, 1985; Helgeson & Cohen, 1996; House, House, & Umberson, 1988; Thoits, 1986). In line with the earlier mention of individual differences in attachment style, perception of support and acceptance from significant others (as an external resource) can be seen as providing a person with a solid base of security from which to move and to which to return (Hazan & Shaver, 1994).

When considering situational variables that foster growth, another association I have is to the literature of self-determination (Deci & Ryan, 1985, 1991; Ryan, 1993). This literature derives partly from the idea that behavior can be self-determined or can be controlled by forces outside the self. Controlled behavior is less likely to result in growth than is self-determined behavior. Numerous studies indicate that situational variables with a controlling nature, such as deadlines or surveillance, can undermine the sense of self-determination. It is only a short extrapolation to suggest that variables such as these may interfere with thriving. Situational variables that foster self-determination, on the other hand, should offer opportunities for thriving.

Another literature bearing on this issue stems from the idea that people sometimes see the tasks in which they are engaged as opportunities to show that they have particular knowledge and skills, and sometimes see the tasks as opportunities to acquire or extend their knowledge and skills (Dweck, 1996). Although individual differences influence the orientation that people develop in this regard, there is also evidence that situational differences can influence these perspectives as well. To the extent that people are encouraged to view their posttraumatic situation as one in which growth can occur (as opposed to a situation of "either you have what it takes or you don't"), growth is more likely to take place. As Tedeschi and Calhoun (1995) have pointed out, skilled therapists can insert such encouragement at propitious moments, helping to tip the balance toward growth. Indeed, preliminary evidence that therapy has such effects on personal growth is appearing in some of our own work with cancer patients, work that is now in progress.

Why Does Thriving Matter?

There are many reasons to be interested in the concept of thriving. My own interest is selfish. I am interested in implications the concept may have for understanding the nature of human self-regulation more generally (cf. Carver & Scheier, 1998). Other people whose work is represented in this discussion are interested in thriving for other reasons—for example, because thriving reflects the noble side of the human experience, making something good out of something bad. It should also be noted, though, that there are practical reasons for being interested in the existence of this phenomenon and for understanding its nature, in order to foster its occurrence. Practical, of course, means financial.

When people have heart attacks or strokes, are treated for cancer or rheumatoid arthritis, or experience rape, natural disaster, loss of a job, or other traumatic events, their future becomes more uncertain. Some of these people are more resilient than others, rebounding from their adversity to their premorbid level of functioning (or nearly so). These people cost the health care (and mental health care) delivery system considerably less than less resilient people.

Some individuals are even stronger after their traumatic event than before. These people cost the system even less, by being less prone to relapse, maybe even less vulnerable to new adversities. If we can understand why some people thrive, and if we can teach the skill to others, the benefits to the nation's health care system could potentially be enormous. If for no reason other than this, thriving would certainly be a very important concept worthy of further investigation.

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