Chapter 13
Emerging Goals and the Self-Regulation of Behavior

Mihaly Csikszentmihalyi and Jeanne Nakamura

We agree with the general thrust of Carver and Scheier's position on self-regulation and applaud their important effort to integrate complexity models in their synthesis. These models appear to be helping the authors think about a number of phenomena that lie beyond the scope of their original cybernetic model, such as the competing pulls exerted by multiple goals, the influence of nonlinear forces, and the impact of initial conditions on subsequent pathways. We will not delve into points of agreement, however, but focus instead on issues where we see things somewhat differently.

Where Do Goals Come From?

Carver and Scheier—and the previous cybernetic theorists by whose work they were inspired (e.g. Miller et al. 1960)—assume the existence of goals. Goals come into their models as a deus ex machina, something that needs no explanation. In the chapter, there is cursory consideration of new goals (e.g., in relation to emergent behavior; as reorganizations that occur when traumatic events destabilize existing patterns; also when, on p. 59, they remark that the formation of goals has not been well explored), but basically, they are taken for granted.

Such a strategy could be defended on the grounds that one cannot deal with every aspect of so complex an issue and that the authors felt that the question of how goals originate was irrelevant to their discussion. In our opinion, however, leaving the ontogenesis of goals out of the picture distorts everything that follows and detracts from the accuracy of their models.

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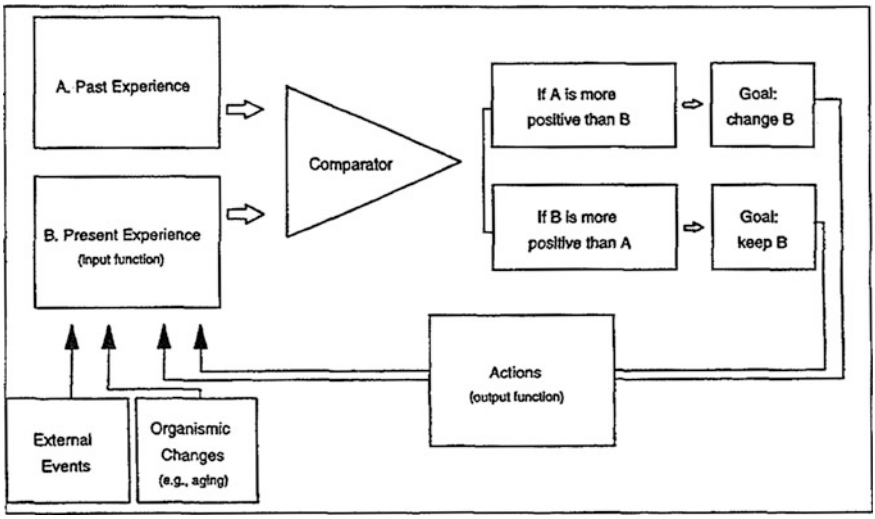

Fig. 13.1 Experience-based feedback loop (cf. Fig. 1, this volume)

The authors would presumably agree that early in life, goals are not the primary reference points against which feedback is evaluated. Instead, behavior is best seen as being regulated by the intent to optimize experiential states. The process consists of a feedback loop in which present experiences are compared to past experiences, and, depending on the affects generated, the goal becomes to either maintain or to change the quality of experience.

An infant begins to act not to reach goals, but because it has motor skills that make actions possible and because it has genetically programmed needs to take care of. If the actions of the infant produce a pleasurable experience, a positive emotion will arise and the infant may then develop the goal of repeating the experience. For instance, the first random strugglings of the infant may bring its mouth in contact with the mother's breast, activating a sucking response. Because feeding is pleasurable, it produces a feeling of contentment that the child will want to experience again when hunger returns. After repeated sequences of this sort, the infant will develop a dim mental representation of this feedback cycle. At that point, one might say that the infant has developed the goal of reaching the nipple when hungry, and from then on, that goal will regulate its feeding behavior.

Emotions Determine Goals, not Vice Versa

We would argue that such a developmental perspective helps to understand behavior not only at the first stages of infancy, but also all through life. To represent the feedback loop, in Fig. 13.1 of Carver and Scheier's chapter, we would substitute the legend "Past Experience" in the box that now says "Goal,

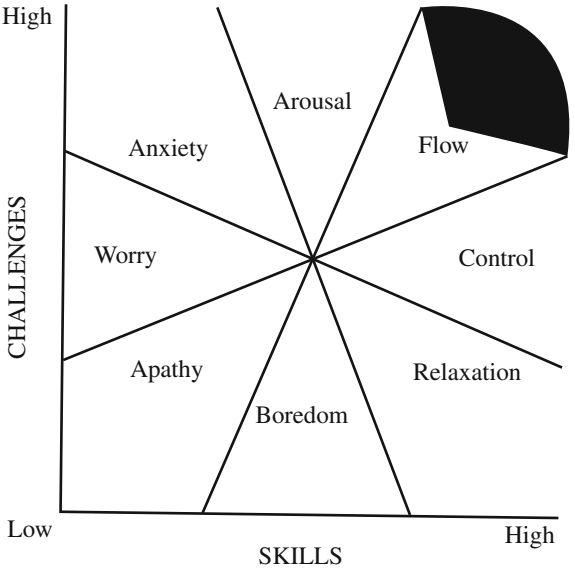

Fig. 13.2 Quality of experience as a function of the relation between challenges and skills. *Note* From Finding Flow, by Csikszentmihalyi (1997), New York: Basic Books, copyright 1997. Reprinted by permission

standard, reference value" and "Present Experience" in the box now labeled "Input Function." The feedback loop then operates as follows: (a) I become aware of my present experience, including its emotional valence; (b) I compare present emotions to alternatives based on past experiences; and (c) if the comparison is in favor of my present experience, my goal becomes to maintain that state; if not, the goal becomes changing it in favor of one of the alternatives. Here, my current experience is evaluated not in terms of how rapidly it is moving me ahead toward some specified outcome but qua experience, against the reference provided by my earlier experiences (see Fig. 13.1).

Such a revised model has the advantage of being more dynamic, in that it accounts for the constant emergence of new goals. Traveling to a new country, hearing a song, meeting people, reading a book, or being exposed to a new sport, game, or skilled activity are all common events that bring about previously unimagined goals because they provide experiences that, in comparison to the person's baseline, are emotionally more positive.

As an example of how goals emerge in everyday life, consider the account of the origins of an interest in chemistry offered by the Nobel laureate, Linus Pauling, in our study of eminent creators:

> I don't think that I ever sat down and asked myself, "Now what am I going to do in life?" I just went ahead doing what I liked to do … first I liked to read. And I read many books … When I was 11, I began collecting insects and reading books in entomology. When I was 12, I made an effort to collect minerals… I read books on mineralogy and copied tables of properties… out of the books. And then when I was 13, I became interested in chemistry. I was very excited when I realized that chemists could convert certain substances into other substances with quite different properties. (Csikszentmihalyi 1996, pp. 170–171).

The account conveys how one source of enjoyment succeeded another. Pauling presumably could have articulated the circumstances under which each of the interests emerged; for instance, he has described first encountering chemistry in the makeshift lab that a 13-year-old friend had set up at home.

In this sequence of events, a new encounter, more positive than prior positive experiences, is the matrix out of which a goal emerges. In a second possible pattern, the developmental course is more complex. Just as in the preceding case, the key fact is that the emergent goal is experientially based. However, the encountered (perhaps even actively sought) experience has a positive valence because it solves a preexisting problem that is attended by negative affective states. An example or two might help clarify this.

A distinguished writer described an early home life that was difficult and unhappy. Asked about his childhood interests, he recalled,

> Music was the first of these. Music precisely because among other things … it was abstract and therefore could be divorced from all the mess around me. I loved it. I used to listen to it all the time on the radio. I had a little record collection, and played things over and over again until I knew them really by heart. (Csikszentmihalyi 1996, p. 250).

Because they are not thinking of experiential goals, Carver and Scheier are unable to envision how any activity "done to avoid an antigoal" could be intrinsically enjoyed (p. 18). Whereas they describe complex goals in which "approach" is "in the service of avoidance" (p. 11; e.g., practicing a musical instrument in order to avoid punishment), in the example just related, there was no external contingency to be evaded but rather an already existing negative experiential state to be escaped. The abstractness of music made it an attractive escape route.

Consider next a social activist who was interviewed for one of our projects and whose life exemplifies both patterns: first, formation of goals intended to continue an affectively positive experience; then, against the backdrop of negative experience, discovery of a satisfying activity and formation of new goals around it. First, family experiences in early life instilled in her an interest in social activism; as a child, she was caught up in her parents' intense caring about conditions in the wider society and strenuous efforts to help improve them. As a college student during the Vietnam War, however, events led her to conclude that the nation's social problems were much more fundamental than her parents, and she, had believed. This was deeply distressing; indeed "very, very, very traumatic" Against such a backdrop, she found new satisfaction in grassroots work toward radical change and committed herself to this. In response to new conditions, her goals thus changed; but in both cases, the goals were emergent, rooted in immediate experience.

One of the problems in understanding the function of goals in regulating behavior is that the word *goal* implies an end state that motivates a person's strivings. Yet, often goals are really means—they are pursued in; order to achieve a positive affective state. For instance, let us consider why an amateur pianist might sit down to play a concerto. Is it to finish the piece as quickly as possible? Hardly. The goal of completing the piece is simply the means by which the pianist

can experience the enjoyment of playing. Similarly, most mountain climbers set the goal of reaching the summit not because they want to get to the top, but because they want the experience of climbing. Contrary to the generally accepted view in psychology that behavior is directed to achieve consummatory ends, in many instances it is the means that justify the ends.

The Nature of Positive Affect

Given that the self-regulation loop we are proposing rests on optimizing experience, it is important to agree on what constitutes positive affect. We agree with Carver and Scheier that "positive affect results when a behavioral system is [making rapid progress in] doing what it is organized to do" (p. 25)—the square brackets indicate that we would prefer to dispense with the velocity argument implied by the bracketed material. (For example, we suspect that mountain climbers experience joy not because they sense that they are making good progress toward the peak, but because at a given moment they are meeting the challenges of the climb.)

The realization that people feel best when they fulfill their potentialities is at least as old as Aristotle, It was well expressed almost 700 years ago by Dante in one of his philosophical works:

> For in every action, whether caused by necessity or free will, the main intention of the agent is to express his own image; thus it is that every doer, whenever he does, enjoys *(delectatur)* the doing; because everything that is desires to be, and in action the doer unfolds his being, enjoyment naturally follows, for a thing desired always brings delight … therefore nothing acts without making its self manifest. (Alighieri 1317/1921, Book I Chap. 13, translated by senior author).

But how do we know when a system is optimizing its organization? In the case of individuals, we operationalize optimal experience as a subjective event that a person describes as being simultaneously high on environmental opportunities or *challenges,* and high on personal abilities, or *skills* (Csikszentmihalyi 1975; Csikszentmihalyi 1990; Csikszentmihalyi 1997; Csikszentmihalyi and Larson 1987; Csikszentmihalyi and Rathunde 1993; Hektner 1996; Inghilleri 1995, 1999; Massimini and Carli 1988; Massimini, Delle Fave and Carli 1988; Massimini and Inghilleri 1986; Moneta and Csikszentmihalyi 1996).

The two axes of challenges and skills yield a set of ratios that describe the quality of experience in terms that are very similar to, but perhaps more parsimonious than, the models presented in Figs. 1.7–1.9 of the target chapter. For instance, we consistently find that when challenges are seen to be high and skills low, people report being anxious. When they see their, skills as high but the challenges as low, they report a state of relaxation. When both challenges and skills are low, they report boredom and apathy. In those cases when both challenges and skills are high (or at least above the average, baseline level) they report a state of flow, or optimal experience. Because the model (Fig. 13.2) is explicitly

interactionist, focusing on the balance of environmental challenge and personal capacities, it would seem to avoid problems ascribed to efficacy theory by the authors (p. 45).

In our studies also we find that anxiety and apathy (corresponding to "depression" in Carver and Scheier's models) are aversive states, the first high in activation and the second low; whereas flow (corresponding to "elation") and relaxation (corresponding to "relief") are both positive in feeling tone, the first being also high in activation, the second low.

Thus, we would conclude that an optimal experience obtains when a person is maximizing feeling states and is also fully active, which tends to occur when confronting the highest environmental challenge with the fullest use of personal skills. Whenever such an experience occurs, in comparison with past experiences it stands out as better than average, and we want to repeat it. Therefore, it becomes the nucleus of a goal.

The Nature of Goal Directed Behavior

We have suggested that leaving the ontogenesis of goals out of the picture distorts the authors' model of goal-directed behavior. One such distortion, mentioned earlier, is that it renders inconceivable an intrinsically enjoyed activity that is also an antigoal. We turn next to some additional examples of the problems that we perceive.

Carver and Scheier's model implies that people *cruise* (i.e., reduce rather than maintain or increase the effort that they expend) in response to the positive affect associated with making progress more rapidly than had been expected (p. 29), They envision a person juggling many goals; when one is tinder control, the person shifts attention to another. This scenario does not seem to fit the pursuit of experiential goals. An elated scientist, whose attention is riveted by the rapidly emerging solution to a problem, seems unlikely to ease up and deflect energies to another problem because things are going so well.

Again, if Carver and Scheier claim that people find it more difficult to make an effort when goals are important (p. 81), it may be because they have in mind desired outcomes that are not simultaneously experiential goals. People doing something that they enjoy (i.e., people with experiential goals) may be inspired, rather than deterred, by challenges that matter a lot. To put it another way, activity undertaken for its own sake often has outcomes that are subjectively important, without the sense of anxiety that the authors describe.

In addition to revealing possible problems with the dynamics of self-regulation proposed by the authors, the experiential model raises new issues about the self-regulation of behavior and focuses others in a new way. We might ask, for example, what conditions occasion formation of new goals. For instance, the emergence of new goals may be especially likely at certain points in the life course. During adolescence, hormonal changes often bring about a complete

reorientation of goals due to the availability of pleasurable sexual experiences. At midlife, men and women may discover enjoyment in challenges that they have previously ignored, viewing them as the domain of the other gender (e.g., Levinson, Darrow, Klein, Levinson and McKee 1978).

We might ask many questions about the experiential model that we have proposed. What accounts for individual differences in attunement to the quality of one's experience, a factor central to operation of the feedback loop? For instance, what influences lead people to withdraw their attention from the flow of experience? One key factor is how frequently they shift their focus to a relatively distant future, whether doing so in order to monitor their rate of progress or for other reasons.

What other factors affect the consistency with which people are able to optimize the quality of their experience? Environmental conditions, characteristics of the activity, and autotelic personal qualities—a person's capacity to structure interactions with the environment in an experientially rewarding way (Csikszentmihalyi and Csikszentmihalyi 1988; Hektner 1996)—all play roles. An economist's observations during an interview in the Creativity in Later Life Project illustrate the autotelic person's deliberate, consistent structuring of daily activities so as to optimize experiential states:

> …in the morning, that's when I really like intellectual activity; very, very finely focused intellectual activity …And then after lunch is always a time where, you know, I like to slack off, maybe snooze for fifteen minutes, maybe take a bike ride. And it will be okay; you know, I do have chores so that I can justify taking a bike ride …. And then … I'll be doing other things. Maybe I'll take off and garden for a little while, put a load of wash in the machine … then it might feel really good to go and brush the bottom of the swimming pool and then top it off with jumping in and splashing around …. And then in the evening it's nice to have somebody over and have dinner. (Creativity in Later Life Project, June 19, 1990).

The Relationship Between Goals and the Self

We began by observing that Carver and Scheier do not discuss the ontogenesis of goals; no more do they account for the ontogenesis of the self. They write on p. 17: "A broad implication of this sort of theory is that the self is partly the person's goals." However, in the absence of a developmental account, this appears to create another deus ex machina, namely, the self.

In our model, action leads to experience, which leads to affect, which leads to goals. The goals help shape our subsequent experience by guiding, how we channel our attention. When we become aware of our goals and their hierarchical relations to each other, we begin to develop a self. As Dante said, "nothing acts without making its self manifest." The self is the sum of the goals that a person constructs (on the basis of feedback to experiences and affects). It is that which we have learned to desire.

To the extent that a person's actions are not based on self-regulation oriented toward experiential goals one might say that the self is *inauthentic*. In other words, if a person consistently pursues goals that do not produce positive affect, but are chosen for other reasons, the self that is manifested is one that has been constructed by external forces. An *authentic* self, by contrast, is one built on goals chosen because they optimize experience. Such goals need not be lofty at all, as long as they reflect the person's actual experiences. For example, in a recent interview the Canadian novelist Robertson Davies described one of the fundamental principles of his life:

> Well, you know, that leads me to something which I think has been very important in my life, and it sounds foolish and rather trivial. But I've always insisted on having a nap after lunch, and I inherited this from my father. And I one time said to him: "You know, you've done awfully well in the world. You came to Canada as an immigrant boy without anything and you have done very well. What do you attribute it to?" And he said, "Well, what drove me on to be my own boss was that the thing that I wanted most was to be able to have a nap every day after lunch," And I thought, "What an extraordinary impulse to drive a man on!" But it did, and he always had a twenty minute sleep after lunch. And I am the same … *If you will not permit yourself to be driven and flogged through life*, *you'll probably enjoy it more (*Csikszentmihalyi 1996, pp. 58–59).

By setting goals even as trivial as that of enjoying a nap every afternoon, it is possible to build a self that experiences itself as authentic because it knows that instead of being driven and flogged by external forces, it sets its own rules.

Conflict Among Goals

We have been drawing attention to goal-directed behavior in which the goals emerge out of immediate experience. However, in everyday life, most of the time we are not consciously aware of our goals; and when we do think of them, they tend to be unclear and contradictory. In this sense, most of behavior is regulated by patterns of habit and necessity. Most people spend only about one third of their waking hours doing what they want to do. The rest they spend doing things because they feel they have to or because there is nothing else to do. Typically when studying, working, or doing maintenance work around the house, people wish they were doing something else and their affect is below average. At such times, there is a conflict between goals based on immediate experience and goals based on the anticipation of future experience.

It is in flow activities that full involvement in immediate experience tends to occur. These are activities that provide very clear goals moment by moment, immediate feedback, and an opportunity to match challenges with skills. Athletic contests, games, and musical performances have such a structure. Contrary to everyday life experiences with their vaguely defined, shifting, sometimes conflicting demands, these self-contained worlds are clearly structured with unambiguous goals and feedback. In this sense, it is game-like flow activities rather than real life that most closely resemble the feedback loops of cybernetics. Our experiential states

(e.g., anxiety; relaxation) provide information about the balance that currently exists between the challenges we encounter and our skills. The information can be used in the effort to adjust the balance and enter or reenter the flow state.

When involved in such activities, it is possible to forget ourselves and act with total abandon, yet at the fullest level of performance. In Mead's (1934) terms, when we are immersed in an activity, the *me,* the self as an object of awareness, disappears; the *I,* the unconscious actor, takes center stage. As the course of events unfolds, even from moment to moment, we may subtly modify our goals in response to our shifting experiential states. The authentic self is engaged; and because flow is experienced only if our capacities are being fully employed, growth of the self occurs.

In most cultures, it is assumed that a mature individual is one who can delay gratification—in other words, one who opts for investing energy in future goals in preference to present ones. Yet, it is arguable that the ideal situation is one where there is harmony between future and present goals, and the person is fully functioning and involved in the moment without sacrificing future goals. This happens in those circumstances in which externally motivated behavior that initially did not produce positive affect is later reinterpreted by the person so that the experience is now positive (cf. integrated self-regulation; e.g., Deci and Ryan 1985). There is no distinction between what must be done and what one wishes to do. At that point, one achieves that *amor fati,* or love of fate, which philosophers such as Nietzsche and psychologists such as Maslow and Rogers have argued constitutes the fullest realization of an authentic self (Csikszentmihalyi and Rathunde 1998).

For the social activist who both finds daily work absorbing and the long-term goal of social transformation inspiring or the scientist for whom the research process is fascinating and the long-term scientific enterprise compelling, future goals are joined to the immediate rewards of doing something deeply enjoyable. We are suggesting that organizing one's activity around this combination of goals is the optimal way of investing energy. Our primary reservation about Carver and Scheier's chapter concerns its silence on the ontogenesis of such goals, including the role of affective experience in their formation and pursuit. As a result, although their perspective is helpful in describing self-regulation in situations where goals are clear and stable, it may be less successful in illuminating everyday experiences where the affective evaluation of ongoing experience sets the stage for the feedback loops that control behavior.

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