# CHAPTER 32

# Flow

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## A GENERAL CONTEXT FOR A CONCEPT OF MASTERY MOTIVATION

What makes people want to go on with the effort required from life? Every epistemology of behavior must sooner or later cope with this basic question. The question is not so mysterious for nonhuman organisms, which presumably have built-in genetic programs instructing them to live as long as their physical machinery is able to function. But our species has a choice: With the development of consciousness, we have the ability to second-guess and occasionally override the instructions coded in our chromosomes. This evolutionary development has added a great deal of flexibility to the human repertoire of behaviors. But the freedom gained has its downside—too many possibilities can have a paralyzing effect on action (Schwartz, 2000). Among the options we are able to entertain is that of ending our lives; thus, as the existential philosophers remarked, the question of why one should not commit suicide is fundamental to the understanding of human life.

In fact, most attempts at a general psychology also start with the assumption that human beings have a "need" or a "drive" for self-preservation, and that all other motivations, if not reducible to, are then at least based on such a need. For example Maslow's hierarchy assumes that survival takes precedence over all other considerations, and no other need becomes active until survival is reasonably assured.

But where is this will to live located? Is it nothing but a variation of the survival instincts all living organisms share, chemically etched into our genes? The last try for a comprehensive human psychology, that of Sigmund Freud, posited *Eros* as the source of all behavior—a force akin to the *élan vital* of the French philosopher Henri Bergson (1931/1944) and to similar concepts of life energy proposed by a long list of thinkers going back to the beginnings of speculative thought.

Eros, which originally referred to the need of the organism to fulfill its physical potential, was soon reduced in Freud's writings, and even more so in those of his followers, to the libidinal pleasure that through natural selection has become attached to the sexual reproductive act and to the organs implicated in it. Thus, "erotic" eventually became synonymous with "sexual."

This reduction of the concept of vitality to the reproductive function rested on a reasonably sound logic. The Darwinian revolution highlighted the role of sexual selection in evolution; thus, it made sense to see sexuality as the master-need from which all other interests and motives derive. A species survives as long as its members reproduce. If the drive to reproduce became well entrenched in a species, its survival would be enhanced. Following Ockham's principle of parsimony, one might expect that as long as sexual drives are well established, other motives become secondary. Whatever men and women do, from making songs to mapping the heavens, is just a disguised expression of Eros, a manifestation of the reproductive drive.

On closer examination, however, this single causality seems much less convincing. A species needs to take care of many other priorities besides reproduction in order to survive. At the human stage of evolution, where adaptation and survival depend increasingly on flexible responses mediated by conscious thought, members of the species had to learn how to master and control a hostile and changing environment. It makes sense to assume that natural selection favored those individuals, and their descendants, who enjoyed acts of mastery and control—just as survival was enhanced when other acts necessary for survival, such as eating and sex, became experienced as pleasurable.

The various behaviors associated with control and mastery—such as curiosity, interest, exploration; the pursuit of skills, the relishing of challenges—need not be seen as derivatives of thwarted libidinal sexuality. They are just as much a part of human nature, just as necessary for our survival, as the drive to reproduce. The ancients understood this when they coined the aphorism *Libri aut liberi*: "Books or sons." As humans, we have the option of leaving a trace of our existence by writing books (or shaping tools, raising buildings, writing songs, etc.) and thus leaving a cultural legacy, as well as leaving our genes to our progeny. The two are not reducible to each other, but are equally important motives that have become ingrained in our natures.

The idea that the ability to operate effectively in the environment fulfills a primary need is not new in psychology. In Germany, Karl Groos (1901) and Karl Bühler (1930) elaborated the concept of *Funktionlust*, or "activity pleasure," which Jean Piaget (1952) included in the earliest stages of sensorimotor development as the "pleasure of being a cause" that drove infants to experiment. In more recent psychological thought, Hebb (1955) and Berlyne (1960) focused on the nervous system's need for optimal levels of stimulation to explain exploratory behavior and the seeking of novelty, while White (1959) and deCharms (1968) focused on people's need to feel in control, to be the causal agents of their actions. Later Deci and Ryan (Deci, 1971; Deci & Ryan, 1985) elaborated on this line of argument by suggesting that both competence and autonomy were innate psychological needs that must be satisfied for psychological growth and well-being.

Theories that provide explanations for why people are motivated to master and control tend to be *distal*. In other words, they provide sensible explanations, typically based on an evolutionary framework, for why such behaviors should have become established over many generations, in order to support the reproductive success of the individual. However, for an activity pattern to become established in a species' repertoire, it has to be experienced as enjoyable by the individual. To explain how this happens, a *proximal* theory of motivation is needed.

Such a theory must rely on at least four complementary lines of explanation. In the first place, it is likely that mastery-related behavior has become personally rewarding because it has evolved, through literally millions of years of trial and error, as an effective strategy to achieve other goals, such as mates and material resources. Overcoming challenges and excelling is therefore adaptive and increases chances for reproductive success.

Second, one may adopt a more Freudian line and see mastery-related behavior as an

internalized drive that could serve either the purposes of the id (in the case of tyrants or robber barons) or of the superego (in the case of creative, prosocial individuals). In this, as in the previous case, the behavior does not serve an independent function but is a disguised manifestation of other forces seeking their own aims.

Third, the person may seek out such behaviors because of innate or learned psychological needs, such as competence and autonomy. According to this explanation, the enjoyment one experiences during intrinsically motivated behavior is largely a result of the satisfaction of these basic psychological needs.

This chapter deals with a fourth kind of explanation, which we call the "phenomenological account." It tries to look very closely at what people actually experience when they are involved in activities that involve mastery, control, and autonomous behavior, without prejudging the reasons for why such experiences exist. This line of explanation assumes that the human organism is a system in its own right, not reducible to lower levels of complexity, such as stimulus–response pathways, unconscious processes, or neurological structures.

These four kinds of explanations are not incompatible with each other. In fact, they are likely to be all implicated in the genesis and maintenance of mastery behavior at the individual level. Quite often, they support each other, driving the organism in the same direction. But it is also often the case that the genetically programmed instructions may come into conflict with the learned ones, or that the unconscious forces press in a direction contrary to what the phenomenological reality suggests.

## THE NATURE OF FLOW

The fourth of these lines of explanation, focused on events occurring in the consciousness of the individual, is the one here identified with the study of the flow experience. This experience emerged over a quarter-century ago as a result of a series of studies of what were initially called *autotelic activities*; that is, things people seem to do for the activity's own sake.

Why do people perform time-consuming, difficult, and often dangerous activities for which they receive no discernible extrinsic rewards? This was the question that originally prompted one of us into a program of research that involved extensive interviews with hundreds of rock climbers, chess players, athletes, and artists (Csikszentmihalyi, 1975; Nakamura & Csikszentmihalyi, 2002). The basic conclusion was that, in all the various groups studied, the respondents reported a very similar subjective experience that they enjoyed so much that they were willing to go to great lengths to experience it again. This we eventually called the "flow experience," because in describing how it felt when the activity was going well, several respondents used the metaphor of a current that carried them along effortlessly.

Flow is a subjective state that people report when they are completely involved in something to the point of forgetting time, fatigue, and everything else but the activity itself. It is what we feel when we read a well-crafted novel or play a good game of squash, or take part in a stimulating conversation. The defining feature of flow is intense experiential involvement in moment-to-moment activity. Attention is fully invested in the task at hand, and the person functions at his or her fullest capacity. Mark Strand, former Poet Laureate of the United States, in one of our interviews, described this state while writing as follows:

> You're right in the work, you lose your sense of time, you're completely enraptured, you're completely caught up in what you are doing. . . . When you are working on something and you are working well, you have the feeling that there's no other way of saying what you're saying. (in Csikszentmihalyi, 1996, p. 121)

The intense experiential involvement of flow is responsible for three additional subjective characteristics commonly reported: the merging of action and awareness, a sense of control, and an altered sense of time.

### The Merging of Action and Awareness

The default option of consciousness is a chaotic review of things that one fears or desires, resulting in a phenomenological state we have elsewhere labeled "psychic entropy" (Csikszentmihalyi & Csikszentmihalyi,

1988). During flow, however, attentional resources are fully invested in the task at hand, so that objects beyond the immediate interaction generally fail to enter awareness.

One such object is the self. Respondents frequently describe a loss of self-consciousness during flow. Without the required attentional resources, the self-reflective processes that often intrude into awareness and cause attention to be diverted from what needs to be done are silenced, and the usual dualism between actor and action disappears. In the terms that George Herbert Mead introduced (1934/1970), the "me" disappears during flow, and the "I" takes over. A rock climber in an early study of flow put it this way:

> You're so involved in what you're doing you aren't thinking about yourself as separate from the immediate activity. You're no longer a participant observer, only a participant. You're moving in harmony with something else you're part of. (in Csikszentmihalyi, 1975, p. 86)

### A Sense of Control

During flow, we typically experience a sense of control—or, more precisely, a lack of anxiety about losing control that is typical of many situations in normal life. This sense of control is also reported in activities that involve serious risks, such as hang gliding, rock climbing, and race car driving—activities that to an outsider would seem to be much more potentially dangerous than the affairs of everyday life. Yet these activities are structured to provide the participant with the means to reduce the margin of error to as close to zero as possible. Rock climbers, for example, insist that their hair-raising exploits are safer than crossing a busy street in Chicago, because, on the rock face, they can foresee every eventuality, whereas when crossing the street, they are at the mercy of fate. The sense of control respondents describe thus reflects the possibility, rather than the actuality, of control.

Worrying about whether we can succeed at what we are doing—on the job, in relationships, even in crossing a busy street—is one of the major sources of psychic entropy in everyday life, and its reduction during flow is one of the reasons such an experience becomes enjoyable and thus rewarding.

### Altered Sense of Time

William James (1890, Ch. 15, Sec. 4) noted that boredom seems to increase when "we grow attentive to the passage of time itself." During flow, attention is so fully invested in moment-to-moment activity that there is little left over to devote toward the mental processes that contribute to the experience of duration (Friedman, 1990). As a result, persons deeply immersed in an activity typically report time passing quickly (Conti, 2001).

Exceptions occur in certain sports or jobs that require precise knowledge of time, but these are exceptions that prove the rule: Basketball players must learn not to dribble the ball in their own side of the court for more than 10 seconds; football players must learn to "manage the clock" in a close game. Awareness of time in these situations is not extraneous information signifying boredom, but a challenge that the person has to overcome in order to perform well.

## THE CONDITIONS OF FLOW

Flow experiences are relatively rare in everyday life, but almost everything—work, study or religious ritual—is able to produce them, provided certain conditions are met. Past research suggests three conditions of key importance. First, flow tends to occur when the activity one engages in contains a *clear set of goals*. These goals serve to add direction and purpose to behavior. Their value lies in their capacity to structure experience by channeling attention rather than being ends in themselves.

A second precondition for flow is *a balance between perceived challenges and perceived skills*. This condition is reminiscent of the concept of "optimal arousal" (Berlyne, 1960; Hunt, 1965), but differs from it in highlighting the fact that what counts at the phenomenological level is the *perception* of the demands and abilities, not necessarily their objective presence.

When perceived challenges and skills are well matched, as in a close game of tennis or a satisfying musical performance, attention is completely absorbed. This balance, however, is intrinsically fragile. If challenges begin to exceed skills, one typically becomes

anxious; if skills begin to exceed challenges, one relaxes and then becomes bored. These subjective states provide feedback about the shifting relationship to the environment and press the individual to adjust behavior in order to escape the more aversive subjective state and reenter flow.

Finally, flow is dependent on the presence of *clear and immediate feedback*. The individual needs to negotiate the continually changing environmental demands that are part of all experientially involving activity (Reser & Scherl, 1988). Immediate feedback serves this purpose: It informs the individual how well he or she is progressing in the activity, and dictates whether to adjust or maintain the present course of action. It leaves the individual with little doubt about what to do next.

Because flow takes place at a high level of challenge, the feedback one receives during the course of an activity will inevitably include "negative" performance feedback. From a phenomenological viewpoint, this negative feedback will not necessarily be detrimental to task involvement. Provided the individual perceives that he or she possesses the skills to take on the challenges of the activity, the valence of the feedback is of less consequence for activity enjoyment than the usefulness of the feedback in suggesting appropriate corrective measures. Indeed, it is not difficult to think of situations in which we intentionally elicit negative feedback in order to direct attention and behavior (e.g., a pianist practicing with a metronome).

To summarize, clear goals, optimal challenges, and clear, immediate feedback are all necessary features of activities that promote the intrinsically rewarding experiential involvement that characterizes flow. Of course, this is not to say that these are the only factors that affect the degree to which one becomes involved in an activity. Research on task involvement suggests that the importance an individual places on doing well in an activity (i.e., "competence valuation") predicts the individual's involvement in that activity (Greenwald, 1982; Harackiewicz & Elliot, 1998; Harackiewicz & Manderlink, 1984), as does the congruence between task-specific, behaviorally based goals (e.g., "I want to attach a flag to my car's antenna") and higher level, more abstract goals (e.g., "I want to show my patriotism"), with greater congruence leading to greater involvement (Harackiewicz & Elliot, 1998; Rathunde, 1989; Sansone, Sachau, & Weir, 1989). Furthermore, the personal implications an individual attributes to success or failure at an activity can affect his or her interpretation of performance feedback, which in turn has consequences for task involvement (Mueller & Dweck, 1998). With respect to individual differences, Wong (2000) found that autonomy orientation (Deci & Ryan, 1985) was positively related to involvement in school-related activities; absorption (Tellegen & Atkinson, 1974), a trait construct used to measure hypnotic susceptibility, and conceptually related to openness to experience, has been shown to be positively associated with experiential involvement (Glisky, Tataryn, Tobias, Kihlstrom, & McConkey, 1991; Levin & Fireman, 2001; Wild, Kuiken, & Schopflocher, 1995).

## FLOW AND MOTIVATION

Theories of motivation generally neglect the phenomenology of the person to whom motivation is being attributed. They explain the reason for action in functional terms, that is, by considering outcomes rather than processes (Sansone & Harackiewicz, 1996). How the person feels while acting tends to be ignored. Yet individuals constantly evaluate their quality of experience and often will decide to continue or terminate a given behavioral sequence based on their evaluations. Our research suggests that the phenomenological experience of flow is a powerful motivating force. When individuals are fully involved in an activity, they tend to find the activity enjoyable and intrinsically rewarding. Whatever the original motivation for playing chess or playing the stock market, or going out with a friend, such activities will not continue unless they are enjoyable—or unless people are motivated by extrinsic rewards.

### Flow and Competence Motivation

Perceived competence has traditionally played a central part in theories of motivation (Bandura, 1982; Deci, 1975; Harter, 1978; White, 1959). These theories gener-

ally argue that intrinsic motivation is promoted by feelings of competence and efficacy. In support of this, several researchers have found that positive competence feedback is positively related to subsequent motivation to perform an activity (Deci, 1971; Elliot et al., 2000; Fisher, 1978; Harackiewicz, 1979; Ryan, 1982; Vallerand & Reid, 1984).

These findings are consistent with past research on flow. Our studies have found that actors who perceive that they lack the skills to take on effectively the challenges presented by the activity in which they are participating experience anxiety or boredom, depending on how much they value doing well in the activity (Csikszentmihalyi & LeFevre, 1989; Csikszentmihalyi & Nakamura, 1989; Csikszentmihalyi, Rathunde, & Whalen, 1993). Simply put, if an actor feels incompetent in a given situation, he or she will tend not be motivated. However, our research also suggests that although perceived competence seems to be an important precondition for intrinsic motivation, it is often not a predominating characteristic of the phenomenological experience associated with intrinsically motivated behavior. More specifically, much of the reward of intrinsically motivated behavior is derived from the experience of absorption and interest, the epitome of which is flow.

Consider the following example: A person picks up a novel to read. As she begins reading it, she senses that her abilities are not up to the task, that the material is too complex for her to appreciate fully. Feeling unable to take on the challenges of the book because her skills are lacking, she will experience anxiety or boredom, and will probably opt for a less demanding novel or activity. However, if she feels that the complexities of the book are within her capacities and is able to digest the material, her decision either to continue reading the novel or to put it down will be based primarily on her quality of experience while reading the book, namely, the extent to which she finds the book involving and interesting.

## Emergent Motivation

The phenomenology of flow further suggests that we may enjoy a particular activity because of something discovered through the interaction. It is commonly reported, for instance, that a person is at first indifferent or bored by a certain activity, such as listening to classical music or using a computer. Then, when the opportunities for action become clearer or the individual's skills improve, the activity begins to be interesting and, finally, enjoyable. It is in this sense that the rewards of these types of intrinsically motivating activities are "emergent" or a priori unpredictable.

The phenomenon of *emergent motivation* means that we can *come to* experience a new or previously unengaging activity as intrinsically rewarding, if we find flow in it. The motivation to persist in or return to the activity arises out of the experience itself. What happens next is responsive to what happened immediately before, within the interaction, rather than being dictated by a preexisting intentional structure located within either the person (e.g., a goal or drive) or the environment (e.g., a tradition, script, or set of rules). The flow experience is thus a force for expansion in relation to the individual's goal and interest structure, as well as for the growth of skills in relation to an existing interest (Csikszentmihalyi & Nakamura, 1999).

Certain technologies become successful at least in part because they provide flow, thus motivating people to use them. A good example is the Internet, developed with funds made available by the U.S. Department of Defense for purposes of national security. This technology has been adapted to all sorts of unexpected uses and has made possible an enormous variety of unpredicted experiences. It partly accounts, for instance, for the spectacular success of the Linux open system software, where tens of thousands of amateur and professional programmers work hard to come up with new software for the sheer delight of solving a problem, and for being appreciated by respected peers. In the process, Linux has been making headway against much more formidable competitors, such as Microsoft, who have to pay their programmers to write software—a clear example of emergent intrinsic rewards actually trumping extrinsic rewards.

In summary, quality of experience is the proximal cause of intrinsically motivated behavior. When an individual begins, continues, or ends an activity that is not motivated

by extrinsic rewards, such decisions are based primarily on the current or anticipated enjoyment accompanying the activity. In this context, both motivation and goals are emergent, in the sense that they are determined by the actor's moment-to-moment experience.

Is deep experiential involvement a prerequisite for intrinsically motivated behavior? Clearly, it is not. As past research on the structure of affect has demonstrated, positive affect can be in the form of both high- and low-activation positive affect (Tellegen, Watson, & Clark, 1999). Whereas flow represents a state of high-activation positive affect, it contrasts sharply with low-activation positive affect, which is associated with states such as relaxation and contentment. It is consistent with current understandings of evolution to suppose that both of these strategies for coping with the environment, one conservative and the other expansive, were selected over time as important components of the human behavioral repertoire, even though they motivate different—in some sense, opposite—behaviors. Yet because it is only during states of high activation that we are pushed to expand our existing capacities, flow is particularly important to understand given the implications it has for personal growth.

## FLOW AND COMPETENCE-RELEVANT OUTCOMES

High levels of both mental and physical performance usually depend on goal-directed attention produced by specific challenges and clear feedback (Locke, Shaw, Saari, & Latham, 1981). It is therefore not surprising that a host of studies have found a strong positive relationship between flow and performance. For example, flow is positively associated with artistic and scientific creativity (e.g., Perry, 1999; Sawyer, 1992), effective teaching (Csikszentmihalyi, 1996), learning (Csikszentmihalyi et al., 1993), and peak performance in sports (Jackson, Thomas, Marsh, & Smethurst, 2002; Stein, Kimiecik, Daniels, & Jackson, 1995).

Perhaps more compelling than situationally based positive outcomes, however, are the developmental implications of the flow model. As individuals master challenges in an activity, they develop greater levels of skill, and the activity ceases to be as involving as before. To continue experiencing flow, they must identify increasingly greater challenges. Thus, over time, the balance between challenges and skills enhances competence. Experiential goals thus introduce a principle of selection into psychological functioning that fosters growth and stretches a person's existing capacities (cf. Vygotsky, 1978).

This positive relationship between flow and skill development has been demonstrated in a number of studies that have used the experience sampling method (Csikszentmihalyi & Larson, 1984) to examine the phenomenological experience of students within school settings. In longitudinal research with talented adolescents, students still committed to pursuing their talent area at age 17 were compared to peers who had already disengaged. Four years earlier, those who were still committed had experienced more flow and less anxiety than their peers while engaged in school-related activities; they were also more likely to have identified their talent area as a source of flow (Csikszentmihalyi et al., 1993). In a longitudinal study of students talented in mathematics, Heine (1996) showed that those who experienced flow in the first part of the course performed better in the second half, controlling for their initial abilities and grade point average (GPA). Also controlling for initial abilities, Wong and Csikszentmihalyi (1991) found that immediate, experience-based motivation was a better predictor of the difficulty level of classes that students subsequently chose than their motivation to achieve long-term academic goals.

Longitudinal research on resilience suggests that, in addition to enhancing positive outcomes, a subjectively optimal matching of challenge and skill in daily life may protect against negative outcomes (Schmidt, 1999). In a national sample of American adolescents, teenagers who had experienced high adversity at home and/or at school but had access to extracurricular and other challenging activities, and who were involved in these activities and felt successful when engaged in them, were much less likely to have problems years later.

## FLOW AND SPECIES-LEVEL DEVELOPMENT

### Flow and the Evolution of Consciousness

*Consciousness* is the complex system that has evolved in humans for selecting, processing, and storing the profusion of information provided by the senses. Consciousness gives us a measure of control, freeing us from complete subservience to the dictates of genes and culture, by representing alternative courses of action in awareness, thereby introducing the alternative of rejecting rather than enacting them. It thus serves as a clutch between programmed instructions and adaptive behaviors (Csikszentmihalyi & Csikszentmihalyi, 1988). Alongside the genetic and cultural guides to action, it establishes a *teleonomy of the self*, a set of goals that have been freely chosen by the individual (cf. Brandstadter, 1998; Csikszentmihalyi & Massimini, 1985; Deci & Ryan, 1985). It might, of course, prove dangerous to disengage our behavior from direct control by the genetic and cultural instructions that have evolved over millennia of adapting to the environment. On the other hand, doing so may increase the chances for adaptive fit with the present environment, particularly under conditions of radical or rapid change.

In order for consciousness to be used for such positive ends, however, a person must learn to enjoy being conscious. People value in principle but seldom resort to free choice, reflection, and the weighing of alternatives. As Dostoevsky eloquently described in his tale of the Grand Inquisitor, it is much easier to act in terms of habit and convention, relying on genetic and cultural programs, than to decide in terms of one's own experience. This is in part due to the fact that the skills for being conscious need to be cultivated, or the task will seem too daunting and thus produce anxiety.

Our schools are geared to teach cognitive skills, but these do not necessarily develop the skill for being conscious. A young person needs to exercise freedom in the allocation of attention, the pursuit of interests, and the mastering of challenges; only then will he or she begin to enjoy being conscious. This opportunity is rarely present in the normal school environment—or even earlier, in the family environment of the young child. But unless we learn to enjoy using the mind freely, yet in an orderly fashion, the evolution of consciousness is going to be hampered.

### Flow and the Evolution of Culture

Flow is not only an important mechanism in the development of the person, but it also plays an important role in the development of culture. As we mentioned earlier in discussing the successful spread of the Linux open software system, new technologies, beliefs, lifestyles—and even political systems—are often adopted or rejected on the basis of whether they enhance or diminish the probability of producing flow.

Professor Fausto Massimini of the University of Milan was the first scholar to realize the potential of flow to explain the selection of new cultural artifacts, or "memes" (Csikszentmihalyi & Massimini, 1985; Inghilleri, 1999; Massimini, Csikszentmihalyi, & Delle Fave, 1988). Essentially, the likelihood that a new idea, product, or process will survive over time is a function of the attention it attracts. A song, a scientific theory, or a religious system will be remembered and transmitted to the next generation only if some people pay attention to it. And people will pay attention in large part because the new meme provides an enjoyable challenge.

This is clearly the case in the advancement of science. Thomas Kuhn (1970) describes how by focusing attention upon a small range of relatively esoteric problems, scientists are able to delve in greater depth and detail into their investigations, and thereby advance their field. Yet such focused attention cannot be sustained unless there are interesting problems that challenge the scientist. If there are none, the paradigm becomes boring, and the field disappears for lack of young recruits who are attracted to a different field by more interesting problems.

The same holds true for art, according to Collingwood (1938) and Martindale (1990). More generally, any field of creative accomplishment requires concentrated attention, to the exclusion of all other stimuli, which temporarily become irrelevant (Csikszentmihalyi, 1975; Getzels & Csikszentmihalyi,

1976; Nakamura & Csikszentmihalyi, 2001). Yet one does not need to look at great accomplishments to realize this basic function of attention. More mundane work is just as dependent on it. In describing the workers that made industrialization possible at the dawn of capitalism, Max Weber (1930, p. 71) commented on the relationship between puritanical religious beliefs and training on the one hand, and productivity on the other: "The ability of mental concentration . . . is here most often combined with . . . a cool self-control and frugality which enormously increase performance. This creates the most favorable foundation for the conception of labor as an end in itself."

The late Roman Empire, the last decades of Byzantium, and the French court in the second half of the 18th century are only a few of the most notorious examples of what can happen when large segments of society fail to find enjoyment in productive life. To provide such experiences, the rulers of society had to resort to increasingly elaborate and expensive means of control and repression, or else artificial stimulations—circuses, chariot races, balls, and hunts—that drain the attention of a passive population without leaving any useful residue. Whenever a society is unable to provide flow experiences in productive activities, its members will find flow in activities that are either wasteful or actually disruptive.

## CONCLUSIONS

The ability to enjoy challenges and then master them is a fundamental metaskill that is essential to individual development and to cultural evolution. Yet many obstacles prevent individuals from experiencing flow. These range from inherited genetic malfunctions to forms of social oppression that reduce personal freedom and prevent the acquisition of skills.

But even in the most benign situations, flow may be difficult to attain. For instance, in our society at present, most parents are determined to provide the best conditions for their children's future happiness. They work hard, so that they can buy a nice home in the suburbs, get all the consumer goods they can afford, and send the children to the best schools possible. Unfortunately, none of this guarantees that the children will get what they need to learn in order to enjoy life. In fact, a growing number of studies suggests that excessive concern for safety, comfort, and material well-being is detrimental to optimal development (Csikszentmihalyi & Hunter, 2003; Kasser & Ryan, 1993; Schmuck & Sheldon, 2001). The sterile surroundings of our living arrangements, the absence of working parents and other adults who could initiate young people into the joys of living, the addictive nature of passive entertainment and the reliance on material rewards, and the excessive concern of schools with testing and with disembodied knowledge all militate against learning to enjoy mastering the challenges that life inevitably presents.

Thus, understanding how flow works is essential for social scientists interested in improving the quality of life at either the subjective or objective level. Transforming this knowledge into effective action is not easy. But the challenges this presents promise almost infinite opportunities for enjoyment to those who are willing to develop the skills necessary to master them.

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