

"Flow is important. The way to happiness lies not in mindless hedonism, but in mindful challenge."

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"An intriguing look at the age-old problem of the pursuit of happiness."

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Each year sees hundreds of titles published with advice on how to stay trim, how to grow rich, or how to develop self-confidence. While these self-help books may help a reader in the short term, they are likely to be unsatisfying, for they do little to enhance the *quality* of experience. But what really does make people glad to be alive? What are the inner experiences that make life worthwhile?

For more than two decades Mihaly Csikszentmihalyi has been studying states of "optimal experience"—those times when people report feelings of concentration and deep enjoyment. These investigations have revealed that what makes experience genuinely satisfying is a state of consciousness called *flow*—a state of concentration so focused that it amounts to absolute absorption in an activity. Everyone experiences flow from time to time and will recognize its characteristics: People typically feel strong, alert, in effortless control, unselfconscious, and at the peak of their abilities. Both the sense of time and emotional problems seem to disappear, and there is an exhilarating feeling of transcendence. *Flow: The Psychology of Optimal Experience* reveals how this pleasurable state can, in fact, be controlled, and not just left to chance, by setting ourselves challenges—tasks that are neither too difficult nor too simple for our abilities. With such goals, we learn to order the information that enters consciousness and thereby improve the quality of our lives.

Flow is expected to become one of the most productive areas of psychological research during the next decade. *Flow: The Psychology of Optimal Experience* is the ideal introduction to this remarkable subject and a book that can lead its readers to discover the true richness of everyday life.

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FLOW

THE PSYCHOLOGY OF
OPTIMAL EXPERIENCE

STEPS TOWARD ENHANCING



THE QUALITY OF LIFE

MIHALY CSIKSZENTMIHALYI

"Flow couldn't come at a better time for us. An inspiring, worthwhile read."

—Chicago Sun-Times

among many others observed, if Christ had returned to preach his message of liberation in the Middle Ages, he would have been crucified again and again by the leaders of that very church whose worldly power was built on his name.

In each new epoch—perhaps every generation, or even every few years, if the conditions in which we live change that rapidly—it becomes necessary to rethink and reformulate what it takes to establish autonomy in consciousness. Early Christianity helped the masses free themselves from the power of the ossified imperial regime and from an ideology that could give meaning only to the lives of the rich and the powerful. The Reformation liberated great numbers of people from their political and ideological exploitation by the Roman Church. The *philosophes* and later the statesmen who drafted the American Constitution resisted the controls established by kings, popes, and aristocracy. When the inhuman conditions of factory labor became the most obvious obstacles to the workers' freedom to order their own experience, as they were in nineteenth-century industrial Europe, Marx's message turned out to be especially relevant. The much more subtle but equally coercive social controls of bourgeois Vienna made Freud's road to liberation pertinent to those whose minds had been warped by such conditions. The insights of the Gospels, of Martin Luther, of the framers of the Constitution, of Marx and Freud—just to mention a very few of those attempts that have been made in the West to increase happiness by enhancing freedom—will always be valid and useful, even though some of them have been perverted in their application. But they certainly do not exhaust either the problems or the solutions.

Given the recurring need to return to this central question of how to achieve mastery over one's life, what does the present state of knowledge say about it? How can it help a person learn to rid himself of anxieties and fears and thus become free of the controls of society, whose rewards he can now take or leave? As suggested before, the way is through control over consciousness, which in turn leads to control over the quality of experience. Any small gain in that direction will make life more rich, more enjoyable, more meaningful. Before starting to explore ways in which to improve the quality of experience, it will be useful to review briefly how consciousness works and what it actually means to have "experiences." Armed with this knowledge, one can more easily achieve personal liberation.

THE ANATOMY OF CONSCIOUSNESS

AT CERTAIN TIMES in history cultures have taken it for granted that a person wasn't fully human unless he or she learned to master thoughts and feelings. In Confucian China, in ancient Sparta, in Republican Rome, in the early Pilgrim settlements of New England, and among the British upper classes of the Victorian era, people were held responsible for keeping a tight rein on their emotions. Anyone who indulged in self-pity, who let instinct rather than reflection dictate actions, forfeited the right to be accepted as a member of the community. In other historical periods, such as the one in which we are now living, the ability to control oneself is not held in high esteem. People who attempt it are thought to be faintly ridiculous, "upright," or not quite "with it." But whatever the dictates of fashion, it seems that those who take the trouble to gain mastery over what happens in consciousness do live a happier life.

To achieve such mastery it is obviously important to understand how consciousness works. In the present chapter, we shall take a step in that direction. To begin with, and just to clear the air of any suspicion that in talking about consciousness we are referring to some mysterious process, we should recognize that, like every other dimension of human behavior, it is the result of biological processes. It exists only because of the incredibly complex architecture of our nervous system, which in turn is built up according to instructions contained in the protein

molecules of our chromosomes. At the same time, we should also recognize that the way in which consciousness works is not entirely controlled by its biological programming—in many important respects that we shall review in the pages that follow, it is self-directed. In other words, consciousness has developed the ability to override its genetic instructions and to set its own independent course of action.

The function of consciousness is to represent information about what is happening outside and inside the organism in such a way that it can be evaluated and acted upon by the body. In this sense, it functions as a clearinghouse for sensations, perceptions, feelings, and ideas, establishing priorities among all the diverse information. Without consciousness we would still "know" what is going on, but we would have to react to it in a reflexive, instinctive way. With consciousness, we can deliberately weigh what the senses tell us, and respond accordingly. And we can also invent information that did not exist before: it is because we have consciousness that we can daydream, make up lies, and write beautiful poems and scientific theories.

Over the endless dark centuries of its evolution, the human nervous system has become so complex that it is now able to affect its own states, making it to a certain extent functionally independent of its genetic blueprint and of the objective environment. A person can make himself happy, or miserable, regardless of what is actually happening "outside," just by changing the contents of consciousness. We all know individuals who can transform hopeless situations into challenges to be overcome, just through the force of their personalities. This ability to persevere despite obstacles and setbacks is the quality people most admire in others, and justly so; it is probably the most important trait not only for succeeding in life, but for enjoying it as well.

To develop this trait, one must find ways to order consciousness so as to be in control of feelings and thoughts. It is best not to expect that shortcuts will do the trick. Some people have a tendency to become very mystical when talking about consciousness and expect it to accomplish miracles that at present it is not designed to perform. They would like to believe that anything is possible in what they think of as the spiritual realm. Other individuals claim the power to channel into past existences, to communicate with spiritual entities, and to perform uncanny feats of extrasensory perception. When not outright frauds, these accounts usually turn out to be self-delusions—lies that an overly receptive mind tells itself.

The remarkable accomplishments of Hindu fakirs and other practitioners of mental disciplines are often presented as examples of the

unlimited powers of the mind, and with more justification. But even many of these claims do not hold up under investigation, and the ones that do can be explained in terms of the extremely specialized training of a normal mind. After all, mystical explanations are not necessary to account for the performance of a great violinist, or a great athlete, even though most of us could not even begin to approach their powers. The yogi, similarly, is a virtuoso of the control of consciousness. Like all virtuosos, he must spend many years learning, and he must keep constantly in training. Being a specialist, he cannot afford the time or the mental energy to do anything other than fine-tune his skill at manipulating inner experiences. The skills the yogi gains are at the expense of the more mundane abilities that other people learn to develop and take for granted. What an individual yogi can do is amazing—but so is what a plumber can do, or a good mechanic.

Perhaps in time we shall discover hidden powers of the mind that will allow it to make the sort of quantum leaps that now we can only dream about. There is no reason to rule out the possibility that eventually we shall be able to bend spoons with brain waves. But at this point, when there are so many more mundane but no less urgent tasks to accomplish, it seems a waste of time to lust for powers beyond our reach when consciousness, with all its limitations, could be employed so much more effectively. Although in its present state it cannot do what some people would wish it to do, the mind has enormous untapped potential that we desperately need to learn how to use.

Because no branch of science deals with consciousness directly, there is no single accepted description of how it works. Many disciplines touch on it and thus provide peripheral accounts. Neuroscience, neuroanatomy, cognitive science, artificial intelligence, psychoanalysis, and phenomenology are some of the most directly relevant fields to choose from; however, trying to summarize their findings would result in an account similar to the descriptions the blind men gave of the elephant: each different, and each unrelated to the others. No doubt we shall continue to learn important things about consciousness from these disciplines, but in the meantime we are left with the task of providing a model that is grounded in fact, yet expressed simply enough so that anyone can make use of it.

Although it sounds like indecipherable academic jargon, the most concise description of the approach I believe to be the clearest way to examine the main facets of what happens in the mind, in a way that can be useful in the actual practice of everyday life, is "a phenomenological model of consciousness based on information theory." This representa-

tion of consciousness is *phenomenological* in that it deals directly with events—phenomena—as we experience and interpret them, rather than focusing on the anatomical structures, neurochemical processes, or unconscious purposes that make these events possible. Of course, it is understood that whatever happens in the mind is the result of electrochemical changes in the central nervous system, as laid down over millions of years by biological evolution. But phenomenology assumes that a mental event can be best understood if we look at it directly as it was experienced, rather than through the specialized optics of a particular discipline. Yet in contrast to pure phenomenology, which intentionally excludes any other theory or science from its method, the model we will explore here adopts principles from *information theory* as being relevant for understanding what happens in consciousness. These principles include knowledge about how sensory data are processed, stored, and used—the dynamics of attention and memory.

With this framework in mind, what, then, does it mean to be conscious? It simply means that certain specific *conscious events* (sensations, feelings, thoughts, intentions) are occurring, and that we are able to direct their course. In contrast, when we are dreaming, some of the same events are present, yet we are not conscious because we cannot control them. For instance, I may dream of having received news of a relative's being involved in an accident, and I may feel very upset. I might think, "I wish I could be of help." Despite the fact that I perceive, feel, think, and form intentions in the dream, I cannot act on these processes (by making provisions for checking out the truthfulness of the news, for example) and hence, I am not conscious. In dreams we are locked into a single scenario we cannot change at will. The events that constitute consciousness—the "things" we see, feel, think, and desire—are information that we can manipulate and use. Thus we might think of consciousness as *intentionally ordered information*.

This dry definition, accurate as it is, does not fully suggest the importance of what it conveys. Since for us outside events do not exist unless we are aware of them, consciousness corresponds to subjectively experienced reality. While everything we feel, smell, hear, or remember is potentially a candidate for entering consciousness, the experiences that actually do become part of it are much fewer than those left out. Thus, while consciousness is a mirror that reflects what our senses tell us about what happens both outside our bodies and within the nervous system, it reflects those changes selectively, actively shaping events, imposing on them a reality of its own. The reflection consciousness provides is what we call *our* life: the sum of all we have heard, seen, felt,

hoped, and suffered from birth to death. Although we believe that there are "things" outside consciousness, we have direct evidence only of those that find a place in it.

As the central clearinghouse in which varied events processed by different senses can be represented and compared, consciousness can contain a famine in Africa, the smell of a rose, the performance of the Dow Jones, and a plan to stop at the store to buy some bread all at the same time. But that does not mean that its content is a shapeless jumble.

We may call *intentions* the force that keeps information in consciousness ordered. Intentions arise in consciousness whenever a person is aware of desiring something or wanting to accomplish something. Intentions are also bits of information, shaped either by biological needs or by internalized social goals. They act as magnetic fields, moving attention toward some objects and away from others, keeping our mind focused on some stimuli in preference to others. We often call the manifestation of intentionality by other names, such as instinct, need, drive, or desire. But these are all explanatory terms, telling us why people behave in certain ways. Intention is a more neutral and descriptive term; it doesn't say *why* a person wants to do a certain thing, but simply states *that* he does.

For instance, whenever blood sugar level drops below a critical point, we start feeling uneasy: we might feel irritable and sweaty, and get stomach cramps. Because of genetically programmed instructions to restore the level of sugar in the blood, we might start thinking about food. We will look for food until we eat and are no longer hungry. In this instance we could say that it was the hunger drive that organized the content of consciousness, forcing us to focus attention on food. But this is already an interpretation of the facts—no doubt chemically accurate, but phenomenologically irrelevant. The hungry person is not aware of the level of sugar in his bloodstream; he knows only that there is a bit of information in his consciousness that he has learned to identify as "hunger."

Once the person is aware that he is hungry, he might very well form the intention of obtaining some food. If he does so, his behavior will be the same as if he were simply obeying a need or drive. But alternatively, he could disregard the pangs of hunger entirely. He might have some stronger and opposite intentions, such as losing weight, or wanting to save money, or fasting for religious reasons. Sometimes, as in the case of political protesters who wish to starve themselves to death, the intention of making an ideological statement might override genetic instructions, resulting in voluntary death.

The intentions we either inherit or acquire are organized in hierarchies of goals, which specify the order of precedence among them. For the protester, achieving a given political reform may be more important than anything else, life included. That one goal takes precedence over all others. Most people, however, adopt "sensible" goals based on the needs of their body—to live a long and healthy life, to have sex, to be well fed and comfortable—or on the desires implanted by the social system—to be good, to work hard, to spend as much as possible, to live up to others' expectations. But there are enough exceptions in every culture to show that goals are quite flexible. Individuals who depart from the norms—heroes, saints, sages, artists, and poets, as well as madmen and criminals—look for different things in life than most others do. The existence of people like these shows that consciousness can be ordered in terms of different goals and intentions. Each of us has this freedom to control our subjective reality.

THE LIMITS OF CONSCIOUSNESS

If it were possible to expand indefinitely what consciousness is able to encompass, one of the most fundamental dreams of humankind would come true. It would be almost as good as being immortal or omnipotent—in short, godlike. We could think everything, feel everything, do everything, scan through so much information that we could fill up every fraction of a second with a rich tapestry of experiences. In the space of a lifetime we could go through a million, or—why not?—through an infinite number of lives.

Unfortunately, the nervous system has definite limits on how much information it can process at any given time. There are just so many "events" that can appear in consciousness and be recognized and handled appropriately before they begin to crowd each other out. Walking across a room while chewing gum at the same time is not too difficult, even though some statesmen have been alleged to be unable to do it; but, in fact, there is not that much more that can be done concurrently. Thoughts have to follow each other, or they get jumbled. While we are thinking about a problem we cannot truly experience either happiness or sadness. We cannot run, sing, and balance the checkbook simultaneously, because each one of these activities exhausts most of our capacity for attention.

At this point in our scientific knowledge we are on the verge of being able to estimate how much information the central nervous system is capable of processing. It seems we can manage at most seven bits of

information—such as differentiated sounds, or visual stimuli, or recognizable nuances of emotion or thought—at any one time, and that the shortest time it takes to discriminate between one set of bits and another is about $1/18$ of a second. By using these figures one concludes that it is possible to process at most 126 bits of information per second, or 7,560 per minute, or almost half a million per hour. Over a lifetime of seventy years, and counting sixteen hours of waking time each day, this amounts to about 185 billion bits of information. It is out of this total that everything in our life must come—every thought, memory, feeling, or action. It seems like a huge amount, but in reality it does not go that far.

The limitation of consciousness is demonstrated by the fact that to understand what another person is saying we must process 40 bits of information each second. If we assume the upper limit of our capacity to be 126 bits per second, it follows that to understand what three people are saying simultaneously is theoretically possible, but only by managing to keep out of consciousness every other thought or sensation. We couldn't, for instance, be aware of the speakers' expressions, nor could we wonder about why they are saying what they are saying, or notice what they are wearing.

Of course, these figures are only suggestive at this point in our knowledge of the way the mind works. It could be argued justifiably that they either underestimate or overestimate the capacity of the mind to process information. The optimists claim that through the course of evolution the nervous system has become adept at "chunking" bits of information so that processing capacity is constantly expanded. Simple functions like adding a column of numbers or driving a car grow to be automated, leaving the mind free to deal with more data. We also learn how to compress and streamline information through symbolic means—language, math, abstract concepts, and stylized narratives. Each biblical parable, for instance, tries to encode the hard-won experience of many individuals over unknown eons of time. Consciousness, the optimists argue, is an "open system"; in effect, it is infinitely expandable, and there is no need to take its limitations into account.

But the ability to compress stimuli does not help as much as one might expect. The requirements of life still dictate that we spend about 8 percent of waking time eating, and almost the same amount taking care of personal bodily needs such as washing, dressing, shaving, and going to the bathroom. These two activities alone take up 15 percent of consciousness, and while engaged in them we can't do much else that requires serious concentration. But even when there is nothing else

pressing occupying their minds, most people fall far below the peak capacity for processing information. In the roughly one-third of the day that is free of obligations, in their precious "leisure" time, most people in fact seem to use their minds as little as possible. The largest part of free time—almost half of it for American adults—is spent in front of the television set. The plots and characters of the popular shows are so repetitive that although watching TV requires the processing of visual images, very little else in the way of memory, thinking, or volition is required. Not surprisingly, people report some of the lowest levels of concentration, use of skills, clarity of thought, and feelings of potency when watching television. The other leisure activities people usually do at home are only a little more demanding. Reading most newspapers and magazines, talking to other people, and gazing out the window also involve processing very little new information, and thus require little concentration.

So the 185 billion events to be enjoyed over our mortal days might be either an overestimate or an underestimate. If we consider the amount of data the brain could theoretically process, the number might be too low; but if we look at how people actually use their minds, it is definitely much too high. In any case, an individual can experience only so much. Therefore, the information we allow into consciousness becomes extremely important; it is, in fact, what determines the content and the quality of life.

ATTENTION AS PSYCHIC ENERGY

Information enters consciousness either because we intend to focus attention on it or as a result of attentional habits based on biological or social instructions. For instance, driving down the highway, we pass hundreds of cars without actually being aware of them. Their shape and color might register for a fraction of a second, and then they are immediately forgotten. But occasionally we notice a particular vehicle, perhaps because it is swerving unsteadily between lanes, or because it is moving very slowly, or because of its unusual appearance. The image of the unusual car enters the focus of consciousness, and we become aware of it. In the mind the visual information about the car (e.g., "it is swerving") gets related to information about other errant cars stored in memory, to determine into which category the present instance fits. Is this an inexperienced driver, a drunken driver, a momentarily distracted but competent driver? As soon as the event is matched to an already known class of events, it is identified. Now it must be evaluated: Is this

something to worry about? If the answer is yes, then we must decide on an appropriate course of action: Should we speed up, slow down, change lanes, stop and alert the highway patrol?

All these complex mental operations must be completed in a few seconds, sometimes in a fraction of a second. While forming such a judgment seems to be a lightning-fast reaction, it does take place in real time. And it does not happen automatically: there is a distinct process that makes such reactions possible, a process called *attention*. It is attention that selects the relevant bits of information from the potential millions of bits available. It takes attention to retrieve the appropriate references from memory, to evaluate the event, and then to choose the right thing to do.

Despite its great powers, attention cannot step beyond the limits already described. It cannot notice or hold in focus more information than can be processed simultaneously. Retrieving information from memory storage and bringing it into the focus of awareness, comparing information, evaluating, deciding—all make demands on the mind's limited processing capacity. For example, the driver who notices the swerving car will have to stop talking on his cellular phone if he wants to avoid an accident.

Some people learn to use this priceless resource efficiently, while others waste it. The mark of a person who is in control of consciousness is the ability to focus attention at will, to be oblivious to distractions, to concentrate for as long as it takes to achieve a goal, and not longer. And the person who can do this usually enjoys the normal course of everyday life.

Two very different individuals come to mind to illustrate how attention can be used to order consciousness in the service of one's goals. The first is E., a European woman who is one of the best-known and powerful women in her country. A scholar of international reputation, she has at the same time built up a thriving business that employs hundreds of people and has been on the cutting edge of its field for a generation. E. travels constantly to political, business, and professional meetings, moving among her several residences around the world. If there is a concert in the town where she is staying, E. will probably be in the audience; at the first free moment she will be at the museum or library. And while she is in a meeting, her chauffeur, instead of just standing around and waiting, will be expected to visit the local art gallery or museum; for on the way home, his employer will want to discuss what he thought of its paintings.

Not one minute of E.'s life is wasted. Usually she is writing, solving

problems, reading one of the five newspapers or the earmarked sections of books on her daily schedule—or just asking questions, watching curiously what is going on, and planning her next task. Very little of her time is spent on the routine functions of life. Chatting or socializing out of mere politeness is done graciously, but avoided whenever possible. Each day, however, she devotes some time to recharging her mind, by such simple means as standing still for fifteen minutes on the lakeshore, facing the sun with eyes closed. Or she may take her hounds for a walk in the meadows on the hill outside town. E. is so much in control of her attentional processes that she can disconnect her consciousness at will and fall asleep for a refreshing nap whenever she has a moment free.

E.'s life has not been easy. Her family became impoverished after World War I, and she herself lost everything, including her freedom, during World War II. Several decades ago she had a chronic disease her doctors were sure was fatal. But she recovered everything, including her health, by disciplining her attention and refusing to diffuse it on unproductive thoughts or activities. At this point she radiates a pure glow of energy. And despite past hardships and the intensity of her present life, she seems to relish thoroughly every minute of it.

The second person who comes to mind is in many ways the opposite of E., the only similarity being the same unbending sharpness of attention. R. is a slight, at first sight unprepossessing man. Shy, modest to the point of self-effacement, he would be easy to forget immediately after a short meeting. Although he is known to only a few, his reputation among them is very great. He is master of an arcane branch of scholarship, and at the same time the author of exquisite verse translated into many languages. Every time one speaks to him, the image of a deep well full of energy comes to mind. As he talks, his eyes take in everything; every sentence he hears is analyzed three or four different ways even before the speaker has finished saying it. Things that most people take for granted puzzle him; and until he figures them out in an original yet perfectly appropriate way, he will not let them be.

Yet despite this constant effort of focused intelligence, R. gives the impression of restfulness, of calm serenity. He always seems aware of the tiniest ripples of activity in his surroundings. But R. does not notice things in order to change them or judge them. He is content to register reality, to understand, and then, perhaps, to express his understanding. R. is not going to make the immediate impact on society that E. has. But his consciousness is just as ordered and complex; his attention is stretched as far as it can go, interacting with the world around him. And like E., he seems to enjoy his life intensely.

Each person allocates his or her limited attention either by focusing it intentionally like a beam of energy—as do E. and R. in the previous examples—or by diffusing it in desultory, random movements. The shape and content of life depend on how attention has been used. Entirely different realities will emerge depending on how it is invested. The names we use to describe personality traits—such as *extrovert*, *high achiever*, or *paranoid*—refer to the specific patterns people have used to structure their attention. At the same party, the extrovert will seek out and enjoy interactions with others, the high achiever will look for useful business contacts, and the paranoid will be on guard for signs of danger he must avoid. Attention can be invested in innumerable ways, ways that can make life either rich or miserable.

The flexibility of attentional structures is even more obvious when they are compared across cultures or occupational classes. Eskimo hunters are trained to discriminate between dozens of types of snow, and are always aware of the direction and speed of the wind. Traditional Melanesian sailors can be taken blindfolded to any point of the ocean within a radius of several hundred miles from their island home and, if allowed to float for a few minutes in the sea, are able to recognize the spot by the feel of the currents on their bodies. A musician structures her attention so as to focus on nuances of sound that ordinary people are not aware of, a stockbroker focuses on tiny changes in the market that others do not register, a good clinical diagnostician has an uncanny eye for symptoms—because they have trained their attention to process signals that otherwise would pass unnoticed.

Because attention determines what will or will not appear in consciousness, and because it is also required to make any other mental events—such as remembering, thinking, feeling, and making decisions—happen there, it is useful to think of it as *psychic energy*. Attention is like energy in that without it no work can be done, and in doing work it is dissipated. We create ourselves by how we invest this energy. Memories, thoughts, and feelings are all shaped by how we use it. And it is an energy under our control, to do with as we please; hence, attention is our most important tool in the task of improving the quality of experience.

ENTER THE SELF

But what do those first-person pronouns refer to in the lines above, those *we*s and *our*s that are supposed to control attention? Where is the I, the entity that decides what to do with the psychic energy generated

by the nervous system? Where does the captain of the ship, the master of the soul, reside?

As soon as we consider these questions for even a short while, we realize that the *I*, or the *self* as we shall refer to it from now on, is also one of the contents of consciousness. It is one that never strays very far from the focus of attention. Of course my own self exists solely in my own consciousness; in that of others who know me there will be versions of it, most of them probably unrecognizable likenesses of the "original"—myself as I see me.

The self is no ordinary piece of information, however. In fact, it contains everything else that has passed through consciousness: all the memories, actions, desires, pleasures, and pains are included in it. And more than anything else, the self represents the hierarchy of goals that we have built up, bit by bit, over the years. The self of the political activist may become indistinguishable from his ideology, the self of the banker may become wrapped up in his investments. Of course, ordinarily we do not think of our self in this way. At any given time, we are usually aware of only a tiny part of it, as when we become conscious of how we look, of what impression we are making, or of what we really would like to do if we could. We most often associate our self with our body, though sometimes we extend its boundaries to identify it with a car, house, or family. Yet however much we are aware of it, the self is in many ways the most important element of consciousness, for it represents symbolically all of consciousness's other contents, as well as the pattern of their interrelations.

The patient reader who has followed the argument so far might detect at this point a faint trace of circularity. If attention, or psychic energy, is directed by the self, and if the self is the sum of the contents of consciousness and the structure of its goals, and if the contents of consciousness and the goals are the result of different ways of investing attention, then we have a system that is going round and round, with no clear causes or effects. At one point we are saying that the self directs attention, at another, that attention determines the self. In fact, both these statements are true: consciousness is not a strictly linear system, but one in which circular causality obtains. Attention shapes the self, and is in turn shaped by it.

An example of this type of causality is the experience of Sam Browning, one of the adolescents we have followed in our longitudinal research studies. Sam went to Bermuda for a Christmas holiday with his father when he was fifteen. At the time, he had no idea of what he wanted to do with his life; his self was relatively unformed, without an

identity of its own. Sam had no clearly differentiated goals; he wanted exactly what other boys his age are supposed to want, either because of their genetic programs or because of what the social environment told them to want—in other words, he thought vaguely of going to college, then later finding some kind of well-paying job, getting married, and living somewhere in the suburbs. In Bermuda, Sam's father took him on an excursion to a coral barrier, and they dove underwater to explore the reef. Sam couldn't believe his eyes. He found the mysterious, beautifully dangerous environment so enchanting that he decided to become more familiar with it. He ended up taking a number of biology courses in high school, and is now in the process of becoming a marine scientist.

In Sam's case an accidental event imposed itself on his consciousness: the challenging beauty of life in the ocean. He had not planned to have this experience; it was not the result of his self or his goals having directed attention to it. But once he became aware of what went on undersea, Sam *liked* it—the experience resonated with previous things he had enjoyed doing, with feelings he had about nature and beauty, with priorities about what was important that he had established over the years. He felt the experience was something good, something worth seeking out again. Thus he built this accidental event into a structure of goals—to learn more about the ocean, to take courses, to go on to college and graduate school, to find a job as a marine biologist—which became a central element of his self. From then on, his goals directed Sam's attention to focus more and more closely on the ocean and on its life, thereby closing the circle of causality. At first attention helped to shape his self, when he noticed the beauties of the underwater world he had been exposed to by accident; later, as he intentionally sought knowledge in marine biology, his self began to shape his attention. There is nothing very unusual about Sam's case, of course; most people develop their attentional structures in similar ways.

At this point, almost all the components needed to understand how consciousness can be controlled are in place. We have seen that experience depends on the way we invest psychic energy—on the structure of attention. This, in turn, is related to goals and intentions. These processes are connected to each other by the self, or the dynamic mental representation we have of the entire system of our goals. These are the pieces that must be maneuvered if we wish to improve things. Of course, existence can also be improved by outside events, like winning a million dollars in the lottery, marrying the right man or woman, or helping to change an unjust social system. But even these marvelous events must take their place in consciousness, and be connected in positive ways to

our self, before they can affect the quality of life.

The structure of consciousness is beginning to emerge, but so far we have a rather static picture, one that has sketched out the various elements, but not the processes through which they interact. We need now consider what follows whenever attention brings a new bit of information into awareness. Only then will we be ready to get a thorough sense of how experience can be controlled, and hence changed for the better.

DISORDER IN CONSCIOUSNESS: PSYCHIC ENTROPY

One of the main forces that affects consciousness adversely is psychic disorder—that is, information that conflicts with existing intentions, or distracts us from carrying them out. We give this condition many names, depending on how we experience it: pain, fear, rage, anxiety, or jealousy. All these varieties of disorder force attention to be diverted to undesirable objects, leaving us no longer free to use it according to our preferences. Psychic energy becomes unwieldy and ineffective.

Consciousness can become disordered in many ways. For instance, in a factory that produces audiovisual equipment, Julio Martinez—one of the people we studied with the Experience Sampling Method—is feeling listless on his job. As the movie projectors pass in front of him on the assembly line, he is distracted and can hardly keep up the rhythm of moves necessary for soldering the connections that are his responsibility. Usually he can do his part of the job with time to spare and then relax for a while to exchange a few jokes before the next unit stops at his station. But today he is struggling, and occasionally he slows down the entire line. When the man at the next station kids him about it, Julio snaps back irritably. From morning to quivering time tension keeps building, and it spills over to his relationship with his co-workers.

Julio's problem is simple, almost trivial, but it has been weighing heavily on his mind. One evening a few days earlier he noticed on arriving home from work that one of his tires was quite low. Next morning the rim of the wheel was almost touching the ground. Julio would not receive his paycheck till the end of the following week, and he was certain he would not have enough money until then to have the tire patched up, let alone buy a new one. Credit was something he had not yet learned to use. The factory was out in the suburbs, about twenty miles from where he lived, and he simply had to reach it by 8:00 A.M. The only solution Julio could think of was to drive gingerly to the service

station in the morning, fill the tire with air, and then drive to work as quickly as possible. After work the tire was low again, so he inflated it at a gas station near the factory and drove home.

On the morning in question, he had been doing this for three days, hoping the procedure would work until the next paycheck. But today, by the time he made it to the factory, he could hardly steer the car because the wheel with the bum tire was so flat. All through the day he worried: "Will I make it home tonight? How will I get to work tomorrow morning?" These questions kept intruding in his mind, disrupting concentration on his work and throwing a pall on his moods.

Julio is a good example of what happens when the internal order of the self is disrupted. The basic pattern is always the same: some information that conflicts with an individual's goals appears in consciousness. Depending on how central that goal is to the self and on how severe the threat to it is, some amount of attention will have to be mobilized to eliminate the danger, leaving less attention free to deal with other matters. For Julio, holding a job was a goal of very high priority. If he were to lose it, all his other goals would be compromised; therefore keeping it was essential to maintain the order of his self. The flat tire was jeopardizing the job, and consequently it absorbed a great deal of his psychic energy.

Whenever information disrupts consciousness by threatening its goals we have a condition of inner disorder, or *psychic entropy*, a disorganization of the self that impairs its effectiveness. Prolonged experiences of this kind can weaken the self to the point that it is no longer able to invest attention and pursue its goals.

Julio's problem was relatively mild and transient. A more chronic example of psychic entropy is the case of Jim Harris, a greatly talented high school sophomore who was in one of our surveys. Alone at home on a Wednesday afternoon, he was standing in front of the mirror in the bedroom his parents used to share. On the box at his feet, a tape of the Grateful Dead was playing, as it had been almost without interruption for the past week. Jim was trying on one of his father's favorite garments, a heavy green chambray shirt his father had worn whenever the two had gone camping together. Passing his hand over the warm fabric, Jim remembered the cozy feeling of being snuggled up to his dad in the smoky tent, while the loons were laughing across the lake. In his right hand, Jim was holding a pair of large sewing scissors. The sleeves were too long for him, and he was wondering if he dared to trim them. Dad would be furious . . . or would he even notice? A few hours later, Jim was lying in his bed. On the nightstand beside him was a bottle of

aspirin, now empty, although there had been seventy tablets in it just a while before.

Jim's parents had separated a year earlier, and now they were getting a divorce. During the week while he was in school, Jim lived with his mother. Friday evenings he packed up to go and stay in his father's new apartment in the suburbs. One of the problems with this arrangement was that he was never able to be with his friends: during the week they were all too busy, and on weekends Jim was stranded in foreign territory where he knew nobody. He spent his free time on the phone, trying to make connections with his friends. Or he listened to tapes that he felt echoed the solitude gnawing inside him. But the worst thing, Jim felt, was that his parents were constantly battling for his loyalty. They kept making snide remarks about each other, trying to make Jim feel guilty if he showed any interest or love toward one in the presence of the other. "Help!" he scribbled in his diary a few days before his attempted suicide. "I don't want to hate my Mom, I don't want to hate my Dad. I wish they stopped doing this to me."

Luckily that evening Jim's sister noticed the empty bottle of aspirin and called her mother, and Jim ended up in the hospital, where his stomach was pumped and he was set back on his feet in a few days. Thousands of kids his age are not that fortunate.

The flat tire that threw Julio into a temporary panic and the divorce that almost killed Jim don't act directly as physical causes producing a physical effect—as, for instance, one billiard ball hitting another and making it carom in a predictable direction. The outside event appears in consciousness purely as information, without necessarily having a positive or negative value attached to it. It is the self that interprets that raw information in the context of its own interests, and determines whether it is harmful or not. For instance, if Julio had had more money or some credit, his problem would have been perfectly innocuous. If in the past he had invested more psychic energy in making friends on the job, the flat tire would not have created panic, because he could have always asked one of his co-workers to give him a ride for a few days. And if he had had a stronger sense of self-confidence, the temporary setback would not have affected him as much because he would have trusted his ability to overcome it eventually. Similarly, if Jim had been more independent, the divorce would not have affected him as deeply. But at his age his goals must have still been bound up too closely with those of his mother and father, so that the split between them also split his sense of self. Had he had closer friends or a longer record of goals successfully achieved, his self would have had the strength to maintain its integrity.

He was lucky that after the breakdown his parents realized the predicament and sought help for themselves and their son, reestablishing a stable enough relationship with Jim to allow him to go on with the task of building a sturdy self.

Every piece of information we process gets evaluated for its bearing on the self. Does it threaten our goals, does it support them, or is it neutral? News of the fall of the stock market will upset the banker, but it might reinforce the sense of self of the political activist. A new piece of information will either create disorder in consciousness, by getting us all worked up to face the threat, or it will reinforce our goals, thereby freeing up psychic energy.

ORDER IN CONSCIOUSNESS: FLOW

The opposite state from the condition of psychic entropy is optimal experience. When the information that keeps coming into awareness is congruent with goals, psychic energy flows effortlessly. There is no need to worry, no reason to question one's adequacy. But whenever one does stop to think about oneself, the evidence is encouraging: "You are doing all right." The positive feedback strengthens the self, and more attention is freed to deal with the outer and the inner environment.

Another one of our respondents, a worker named Rico Medellin, gets this feeling quite often on his job. He works in the same factory as Julio, a little further up on the assembly line. The task he has to perform on each unit that passes in front of his station should take forty-three seconds to perform—the same exact operation almost six hundred times in a working day. Most people would grow tired of such work very soon. But Rico has been at this job for over five years, and he still enjoys it. The reason is that he approaches his task in the same way an Olympic athlete approaches his event: How can I beat my record? Like the runner who trains for years to shave a few seconds off his best performance on the track, Rico has trained himself to better his time on the assembly line. With the painstaking care of a surgeon, he has worked out a private routine for how to use his tools, how to do his moves. After five years, his best average for a day has been twenty-eight seconds per unit. In part he tries to improve his performance to earn a bonus and the respect of his supervisors. But most often he does not even let on to others that he is ahead and lets his success pass unnoticed. It is enough to know that he can do it, because when he is working at top performance the experience is so enthralling that it is almost painful for him to slow down. "It's better than anything else," Rico says. "It's a whole lot better

than watching TV." Rico knows that very soon he will reach the limit beyond which he will no longer be able to improve his performance at his job. So twice a week he takes evening courses in electronics. When he has his diploma he will seek a more complex job, one that presumably he will confront with the same enthusiasm he has shown so far.

For Pam Davis it is much easier to achieve this harmonious, effortless state when she works. As a young lawyer in a small partnership, she is fortunate to be involved in complex, challenging cases. She spends hours in the library, chasing down references and outlining possible courses of action for the senior partners of the firm to follow. Often her concentration is so intense that she forgets to have lunch, and by the time she realizes that she is hungry it is dark outside. While she is immersed in her job every piece of information fits: even when she is temporarily frustrated, she knows what causes the frustration, and she believes that eventually the obstacle can be overcome.

These examples illustrate what we mean by optimal experience. They are situations in which attention can be freely invested to achieve a person's goals, because there is no disorder to straighten out, no threat for the self to defend against. We have called this state the *flow experience*, because this is the term many of the people we interviewed had used in their descriptions of how it felt to be in top form: "It was like floating," "I was carried on by the flow." It is the opposite of psychic entropy—in fact, it is sometimes called *negentropy*—and those who attain it develop a stronger, more confident self, because more of their psychic energy has been invested successfully in goals they themselves had chosen to pursue.

When a person is able to organize his or her consciousness so as to experience flow as often as possible, the quality of life is inevitably going to improve, because, as in the case of Rico and Pam, even the usually boring routines of work become purposeful and enjoyable. In flow we are in control of our psychic energy, and everything we do adds order to consciousness. One of our respondents, a well-known West Coast rock climber, explains concisely the tie between the avocation that gives him a profound sense of flow and the rest of his life: "It's exhilarating to come closer and closer to self-discipline. You make your body go and everything hurts; then you look back in awe at the self, at what you've done, it just blows your mind. It leads to ecstasy, to self-fulfillment. If you win these battles enough, that battle against yourself, at least for a moment, it becomes easier to win the battles in the world."

The "battle" is not really *against* the self, but against the entropy that brings disorder to consciousness. It is really a battle *for* the self; it

is a struggle for establishing control over attention. The struggle does not necessarily have to be physical, as in the case of the climber. But anyone who has experienced flow knows that the deep enjoyment it provides requires an equal degree of disciplined concentration.

COMPLEXITY AND THE GROWTH OF THE SELF

Following a flow experience, the organization of the self is more complex than it had been before. It is by becoming increasingly complex that the self might be said to grow. Complexity is the result of two broad psychological processes: *differentiation* and *integration*. Differentiation implies a movement toward uniqueness, toward separating oneself from others. Integration refers to its opposite: a union with other people, with ideas and entities beyond the self. A complex self is one that succeeds in combining these opposite tendencies.

The self becomes more differentiated as a result of flow because overcoming a challenge inevitably leaves a person feeling more capable, more skilled. As the rock climber said, "You look back in awe at the self, at what you've done, it just blows your mind." After each episode of flow a person becomes more of a unique individual, less predictable, possessed of rarer skills.

Complexity is often thought to have a negative meaning, synonymous with difficulty and confusion. That may be true, but only if we equate it with differentiation alone. Yet complexity also involves a second dimension—the integration of autonomous parts. A complex engine, for instance, not only has many separate components, each performing a different function, but also demonstrates a high sensitivity because each of the components is in touch with all the others. Without integration, a differentiated system would be a confusing mess.

Flow helps to integrate the self because in that state of deep concentration consciousness is unusually well ordered. Thoughts, intentions, feelings, and all the senses are focused on the same goal. Experience is in harmony. And when the flow episode is over, one feels more "together" than before, not only internally but also with respect to other people and to the world in general. In the words of the climber whom we quoted earlier: "[There's] no place that more draws the best from human beings . . . [than] a mountaineering situation. Nobody hassles you to put your mind and body under tremendous stress to get to the top. . . . Your comrades are there, but you all feel the same way anyway, you're all in it together. Who can you trust more in the twen-

tieth century than these people? People after the same self-discipline as yourself, following the deeper commitment. . . . A bond like that with other people is in itself an ecstasy."

A self that is only differentiated—not integrated—may attain great individual accomplishments, but risks being mired in self-centered egotism. By the same token, a person whose self is based exclusively on integration will be connected and secure, but lack autonomous individuality. Only when a person invests equal amounts of psychic energy in these two processes and avoids both selfishness and conformity is the self likely to reflect complexity.

The self becomes complex as a result of experiencing flow. Paradoxically, it is when we act freely, for the sake of the action itself rather than for ulterior motives, that we learn to become more than what we were. When we choose a goal and invest ourselves in it to the limits of our concentration, whatever we do will be enjoyable. And once we have tasted this joy, we will redouble our efforts to taste it again. This is the way the self grows. It is the way Rico was able to draw so much out of his ostensibly boring job on the assembly line, or R. from his poetry. It is the way E. overcame her disease to become an influential scholar and a powerful executive. Flow is important both because it makes the present instant more enjoyable, and because it builds the self-confidence that allows us to develop skills and make significant contributions to humankind.

The rest of this volume will explore more thoroughly what we know about optimal experiences: how they feel and under what conditions they occur. Even though there is no easy shortcut to flow, it is possible, if one understands how it works, to transform life—to create more harmony in it and to liberate the psychic energy that otherwise would be wasted in boredom or worry.

ENJOYMENT AND THE QUALITY OF LIFE

THERE ARE TWO MAIN STRATEGIES we can adopt to improve the quality of life. The first is to try making external conditions match our goals. The second is to change how we experience external conditions to make them fit our goals better. For instance, feeling secure is an important component of happiness. The sense of security can be improved by buying a gun, installing strong locks on the front door, moving to a safer neighborhood, exerting political pressure on city hall for more police protection, or helping the community to become more conscious of the importance of civil order. All these different responses are aimed at bringing conditions in the environment more in line with our goals. The other method by which we can feel more secure involves modifying what we mean by security. If one does not expect perfect safety, recognizes that risks are inevitable, and succeeds in enjoying a less than ideally predictable world, the threat of insecurity will not have as great a chance of marring happiness.

Neither of these strategies is effective when used alone. Changing external conditions might seem to work at first, but if a person is not in control of his consciousness, the old fears or desires will soon return, reviving previous anxieties. One cannot create a complete sense of inner security even by buying one's own Caribbean island and surrounding it with armed bodyguards and attack dogs.

The myth of King Midas well illustrates the point that controlling

external conditions does not necessarily improve existence. Like most people, King Midas supposed that if he were to become immensely rich, his happiness would be assured. So he made a pact with the gods, who after much haggling granted his wish that everything he touched would turn into gold. King Midas thought he had made an absolutely first-rate deal. Nothing was to prevent him now from becoming the richest, and therefore the happiest, man in the world. But we know how the story ends: Midas soon came to regret his bargain because the food in his mouth and the wine on his palate turned to gold before he could swallow them, and so he died surrounded by golden plates and golden cups.

The old fable continues to echo down the centuries. The waiting rooms of psychiatrists are filled with rich and successful patients who, in their forties or fifties, suddenly wake up to the fact that a plush suburban home, expensive cars, and even an Ivy League education are not enough to bring peace of mind. Yet people keep hoping that changing the external conditions of their lives will provide a solution. If only they could earn more money, be in better physical shape, or have a more understanding partner, they would really have it made. Even though we recognize that material success may not bring happiness, we engage in an endless struggle to reach external goals, expecting that they will improve life.

Wealth, status, and power have become in our culture all too powerful symbols of happiness. When we see people who are rich, famous, or good-looking, we tend to assume that their lives are rewarding, even though all the evidence might point to their being miserable. And we assume that if only we could acquire some of those same symbols, we would be much happier.

If we do actually succeed in becoming richer, or more powerful, we believe, at least for a time, that life as a whole has improved. But symbols can be deceptive: they have a tendency to distract from the reality they are supposed to represent. And the reality is that the quality of life does not depend directly on what others think of us or on what we own. The bottom line is, rather, how we feel about ourselves and about what happens to us. To improve life one must improve the quality of experience.

This is not to say that money, physical fitness, or fame are irrelevant to happiness. They can be genuine blessings, but only if they help to make us feel better. Otherwise they are at best neutral, at worst obstacles to a rewarding life. Research on happiness and life satisfaction suggests that in general there is a mild correlation between wealth and well-being. People in economically more affluent countries (including the

United States) tend to rate themselves as being on the whole more happy than people in less affluent countries. Ed Diener, a researcher from the University of Illinois, found that very wealthy persons report being happy on the average 77 percent of the time, while persons of average wealth say they are happy only 62 percent of the time. This difference, while statistically significant, is not very large, especially considering that the "very wealthy" group was selected from a list of the four hundred richest Americans. It is also interesting to note that not one respondent in Diener's study believed that money by itself guaranteed happiness. The majority agreed with the statement, "Money can increase or decrease happiness, depending on how it is used." In an earlier study, Norman Bradburn found that the highest-income group reported being happy about 25 percent more often than the lowest. Again, the difference was present, but it was not very large. In a comprehensive survey entitled *The Quality of American Life* published a decade ago, the authors report that a person's financial situation is one of the least important factors affecting overall satisfaction with life.

Given these observations, instead of worrying about how to make a million dollars or how to win friends and influence people, it seems more beneficial to find out how everyday life *can* be made more harmonious and more satisfying, and thus achieve by a direct route what cannot be reached through the pursuit of symbolic goals.

PLEASURE AND ENJOYMENT

When considering the kind of experience that makes life better, most people first think that happiness consists in experiencing pleasure: good food, good sex, all the comforts that money can buy. We imagine the satisfaction of traveling to exotic places or being surrounded by interesting company and expensive gadgets. If we cannot afford those goals that slick commercials and colorful ads keep reminding us to pursue, then we are happy to settle for a quiet evening in front of the television set with a glass of liquor close by.

Pleasure is a feeling of contentment that one achieves whenever information in consciousness says that expectations set by biological programs or by social conditioning have been met. The taste of food when we are hungry is pleasant because it reduces a physiological imbalance. Resting in the evening while passively absorbing information from the media, with alcohol or drugs to dull the mind overexcited by the demands of work, is pleasantly relaxing. Traveling to Acapulco is pleasant because the stimulating novelty restores our palate jaded by the

repetitive routines of everyday life, and because we know that this is how the "beautiful people" also spend their time.

Pleasure is an important component of the quality of life, but by itself it does not bring happiness. Sleep, rest, food, and sex provide restorative *homeostatic* experiences that return consciousness to order after the needs of the body intrude and cause psychic entropy to occur. But they do not produce psychological growth. They do not add complexity to the self. Pleasure helps to maintain order, but by itself cannot create new order in consciousness.

When people ponder further about what makes their lives rewarding, they tend to move beyond pleasant memories and begin to remember other events, other experiences that overlap with pleasurable ones but fall into a category that deserves a separate name: *enjoyment*. Enjoyable events occur when a person has not only met some prior expectation or satisfied a need or a desire but also gone beyond what he or she has been programmed to do and achieved something unexpected, perhaps something even unimagined before.

Enjoyment is characterized by this forward movement: by a sense of novelty, of accomplishment. Playing a close game of tennis that stretches one's ability is enjoyable, as is reading a book that reveals things in a new light, as is having a conversation that leads us to express ideas we didn't know we had. Closing a contested business deal, or any piece of work well done, is enjoyable. None of these experiences may be particularly pleasurable at the time they are taking place, but afterward we think back on them and say, "That really was fun" and wish they would happen again. After an enjoyable event we know that we have changed, that our self has grown: in some respect, we have become more complex as a result of it.

Experiences that give pleasure can also give enjoyment, but the two sensations are quite different. For instance, everybody takes pleasure in eating. To enjoy food, however, is more difficult. A gourmet enjoys eating, as does anyone who pays enough attention to a meal so as to discriminate the various sensations provided by it. As this example suggests, we can experience pleasure without any investment of psychic energy, whereas enjoyment happens only as a result of unusual investments of attention. A person can feel pleasure without any effort, if the appropriate centers in his brain are electrically stimulated, or as a result of the chemical stimulation of drugs. But it is impossible to enjoy a tennis game, a book, or a conversation unless attention is fully concentrated on the activity.

It is for this reason that pleasure is so evanescent, and that the self

does not grow as a consequence of pleasurable experiences. Complexity requires investing psychic energy in goals that are new, that are relatively challenging. It is easy to see this process in children: During the first few years of life every child is a little "learning machine" trying out new movements, new words daily. The rapt concentration on the child's face as she learns each new skill is a good indication of what enjoyment is about. And each instance of enjoyable learning adds to the complexity of the child's developing self.

Unfortunately, this natural connection between growth and enjoyment tends to disappear with time. Perhaps because "learning" becomes an external imposition when schooling starts, the excitement of mastering new skills gradually wears out. It becomes all too easy to settle down within the narrow boundaries of the self developed in adolescence. But if one gets to be too complacent, feeling that psychic energy invested in new directions is wasted unless there is a good chance of reaping extrinsic rewards for it, one may end up no longer enjoying life, and pleasure becomes the only source of positive experience.

On the other hand many individuals continue to go to great lengths to preserve enjoyment in whatever they do. I used to know an old man in one of the decrepit suburbs of Naples who made a precarious living out of a ramshackle antique store his family had owned for generations. One morning a prosperous-looking American lady walked into the store, and after looking around for a while, asked the price of a pair of baroque wooden *putti*, those chubby little cherubs so dear to Neapolitan craftsmen of a few centuries ago, and to their contemporary imitators. Signor Orsini, the owner, quoted an exorbitant price. The woman took out her folder of traveler's checks, ready to pay for the dubious artifacts. I held my breath, glad for the unexpected windfall about to reach my friend. But I didn't know Signor Orsini well enough. He turned purple and with barely contained agitation escorted the customer out of the store: "No, no, *signora*, I am sorry but I cannot sell you those angels." To the flabbergasted woman he kept repeating, "I cannot make business with you. You understand?" After the tourist finally left, he calmed down and explained: "If I were starving, I would have taken her money. But since I am not, why should I make a deal that isn't any fun? I enjoy the clash of wits involved in bargaining, when two persons try to outdo each other with ruses and with eloquence. She didn't even flinch. She didn't know any better. She didn't pay me the respect of assuming that I was going to try to take advantage of her. If I had sold those pieces to that woman at that ridiculous price, I would have felt cheated." Few people, in southern Italy or elsewhere, have this strange

attitude toward business transactions. But then I suspect that they don't enjoy their work as much as Signor Orsini did, either.

Without enjoyment life can be endured, and it can even be pleasant. But it can be so only precariously, depending on luck and the cooperation of the external environment. To gain personal control over the quality of experience, however, one needs to learn how to build enjoyment into what happens day in, day out.

The rest of this chapter provides an overview of what makes experience enjoyable. This description is based on long interviews, questionnaires, and other data collected over a dozen years from several thousand respondents. Initially we interviewed only people who spent a great amount of time and effort in activities that were difficult, yet provided no obvious rewards, such as money or prestige: rock climbers, composers of music, chess players, amateur athletes. Our later studies included interviews with ordinary people, leading ordinary existences; we asked them to describe how it felt when their lives were at their fullest, when what they did was most enjoyable. These people included urban Americans—surgeons, professors, clerical and assembly-line workers, young mothers, retired people, and teenagers. They also included respondents from Korea, Japan, Thailand, Australia, various European cultures, and a Navajo reservation. On the basis of these interviews we can now describe what makes an experience enjoyable, and thus provide examples that all of us can use to enhance the quality of life.

THE ELEMENTS OF ENJOYMENT

The first surprise we encountered in our study was how similarly very different activities were described when they were going especially well. Apparently the way a long-distance swimmer felt when crossing the English Channel was almost identical to the way a chess player felt during a tournament or a climber progressing up a difficult rock face. All these feelings were shared, in important respects, by subjects ranging from musicians composing a new quartet to teenagers from the ghetto involved in a championship basketball game.

The second surprise was that, regardless of culture, stage of modernization, social class, age, or gender, the respondents described enjoyment in very much the same way. *What* they did to experience enjoyment varied enormously—the elderly Koreans liked to meditate, the teenage Japanese liked to swarm around in motorcycle gangs—but they described *how* it felt when they enjoyed themselves in almost identical

terms. Moreover, the reasons the activity was enjoyed shared many more similarities than differences. In sum, optimal experience, and the psychological conditions that make it possible, seem to be the same the world over.

As our studies have suggested, the phenomenology of enjoyment has eight major components. When people reflect on how it feels when their experience is most positive, they mention at least one, and often all, of the following. First, the experience usually occurs when we confront tasks we have a chance of completing. Second, we must be able to concentrate on what we are doing. Third and fourth, the concentration is usually possible because the task undertaken has clear goals and provides immediate feedback. Fifth, one acts with a deep but effortless involvement that removes from awareness the worries and frustrations of everyday life. Sixth, enjoyable experiences allow people to exercise a sense of control over their actions. Seventh, concern for the self disappears, yet paradoxically the sense of self emerges stronger after the flow experience is over. Finally, the sense of the duration of time is altered; hours pass by in minutes, and minutes can stretch out to seem like hours. The combination of all these elements causes a sense of deep enjoyment that is so rewarding people feel that expending a great deal of energy is worthwhile simply to be able to feel it.

We shall take a closer look at each of these elements so that we may better understand what makes enjoyable activities so gratifying. With this knowledge, it is possible to achieve control of consciousness and turn even the most humdrum moments of everyday lives into events that help the self grow.

A Challenging Activity That Requires Skills

Sometimes a person reports having an experience of extreme joy, a feeling of ecstasy for no apparent good reason: a bar of haunting music may trigger it, or a wonderful view, or even less—just a spontaneous sense of well-being. But by far the overwhelming proportion of optimal experiences are reported to occur within sequences of activities that are goal-directed and bounded by rules—activities that require the investment of psychic energy, and that could not be done without the appropriate skills. Why this should be so will become clear as we go along; at this point it is sufficient to note that this seems to be universally the case.

It is important to clarify at the outset that an "activity" need not be active in the physical sense, and the "skill" necessary to engage in it need not be a physical skill. For instance, one of the most frequently mentioned enjoyable activities the world over is reading. Reading is an

activity because it requires the concentration of attention and has a goal, and to do it one must know the rules of written language. The skills involved in reading include not only literacy but also the ability to translate words into images, to empathize with fictional characters, to recognize historical and cultural contexts, to anticipate turns of the plot, to criticize and evaluate the author's style, and so on. In this broader sense, any capacity to manipulate symbolic information is a "skill," such as the skill of the mathematician to shape quantitative relationships in his head, or the skill of the musician in combining musical notes.

Another universally enjoyable activity is being with other people. Socializing might at first sight appear to be an exception to the statement that one needs to use skills to enjoy an activity, for it does not seem that gossiping or joking around with another person requires particular abilities. But of course, it does; as so many shy people know, if a person feels self-conscious, he or she will dread establishing informal contacts, and avoid company whenever possible.

Any activity contains a bundle of opportunities for action, or "challenges," that require appropriate skills to realize. For those who don't have the right skills, the activity is not challenging; it is simply meaningless. Setting up a chessboard gets the juices of a chess player flowing, but leaves cold anyone who does not know the rules of the game. To most people, the sheer wall of El Capitan in Yosemite valley is just a huge chunk of featureless rock. But to the climber it is an arena offering an endlessly complex symphony of mental and physical challenges.

One simple way to find challenges is to enter a competitive situation. Hence the great appeal of all games and sports that pit a person or team against another. In many ways, competition is a quick way of developing complexity: "He who wrestles with us," wrote Edmund Burke, "strengthens our nerves, and sharpens our skill. Our antagonist is our helper." The challenges of competition can be stimulating and enjoyable. But when beating the opponent takes precedence in the mind over performing as well as possible, enjoyment tends to disappear. Competition is enjoyable only when it is a means to perfect one's skills; when it becomes an end in itself, it ceases to be fun.

But challenges are by no means confined to competitive or to physical activities. They are necessary to provide enjoyment even in situations where one would not expect them to be relevant. For example, here is a quote from one of our studies, of a statement made by an art expert describing the enjoyment he takes in looking at a painting, something most people would regard as an immediate, intuitive process:

"A lot of pieces that you deal with are very straightforward . . . and you don't find anything exciting about them, you know, but there are other pieces that have some sort of challenge. . . . those are the pieces that stay in your mind, that are the most interesting." In other words, even the passive enjoyment one gets from looking at a painting or sculpture depends on the challenges that the work of art contains.

Activities that provide enjoyment are often those that have been designed for this very purpose. Games, sports, and artistic and literary forms were developed over the centuries for the express purpose of enriching life with enjoyable experiences. But it would be a mistake to assume that only art and leisure can provide optimal experiences. In a healthy culture, productive work and the necessary routines of everyday life are also satisfying. In fact, one purpose of this book is to explore ways in which even routine details can be transformed into personally meaningful games that provide optimal experiences. Mowing the lawn or waiting in a dentist's office can become enjoyable provided one restructures the activity by providing goals, rules, and the other elements of enjoyment to be reviewed below.

Heinz Maier-Leibnitz, the famous German experimental physicist and a descendant of the eighteenth-century philosopher and mathematician, provides an intriguing example of how one can take control of a boring situation and turn it into a mildly enjoyable one. Professor Maier-Leibnitz suffers from an occupational handicap common to academicians: having to sit through endless, often boring conferences. To alleviate this burden he invented a private activity that provides just enough challenges for him not to be completely bored during a dull lecture, but is so automated that it leaves enough attention free so that if something interesting is being said, it will register in his awareness.

What he does is this: Whenever a speaker begins to get tedious, he starts to tap his right thumb once, then the third finger of the right hand, then the index, then the fourth finger, then the third finger again, then the little finger of the right hand. Then he moves to the left hand and taps the little finger, the middle finger, the fourth finger, the index, and the middle finger again, and ends with the thumb of the left hand. Then the right hand reverses the sequence of fingering, followed by the reverse of the left hand's sequence. It turns out that by introducing full and half stops at regular intervals, there are 888 combinations one can move through without repeating the same pattern. By interspersing pauses among the taps at regular intervals, the pattern acquires an almost musical harmony, and in fact it is easily represented on a musical staff.

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After inventing this innocent game, Professor Maier-Leibnitz found an interesting use for it: as a way of measuring the length of trains of thought. The pattern of 888 taps, repeated three times, provides a set of 2,664 taps that, with practice, takes almost exactly twelve minutes to perform. As soon as he starts tapping, by shifting attention to his fingers, Professor Maier-Leibnitz can tell exactly at what point he is in the sequence. So suppose that a thought concerning one of his physics experiments appears in his consciousness while he is tapping during a boring lecture. He immediately shifts attention to his fingers, and registers the fact that he is at the 300th tap of the second series; then in the same split second he returns to the train of thought about the experiment. At a certain point the thought is completed, and he has figured out the problem. How long did it take him to solve the problem? By shifting attention back to his fingers, he notices that he is about to finish the second series—the thought process has taken approximately two and a quarter minutes to play itself out.

Few people bother inventing quite such ingenious and complex diversions to improve the quality of their experiences. But all of us have more modest versions of the same. Everybody develops routines to fill in the boring gaps of the day, or to bring experience back on an even keel when anxiety threatens. Some people are compulsive doodlers, others chew on things or smoke, smooth their hair, hum a tune, or engage in more esoteric private rituals that have the same purpose: to impose order in consciousness through the performance of patterned action. These are the "microflow" activities that help us negotiate the doldrums of the day. But how enjoyable an activity is depends ultimately on its complexity. The small automatic games woven into the fabric of everyday life help reduce boredom, but add little to the positive quality of experience. For that one needs to face more demanding challenges, and use higher-level skills.

In all the activities people in our study reported engaging in, enjoyment comes at a very specific point: whenever the opportunities for action perceived by the individual are equal to his or her capabilities. Playing tennis, for instance, is not enjoyable if the two opponents are mismatched. The less skilled player will feel anxious, and the better player will feel bored. The same is true of every other activity: a piece of music that is too simple relative to one's listening skills will be boring, while music that is too complex will be frustrating. Enjoyment appears at the boundary between boredom and anxiety, when the challenges are just balanced with the person's capacity to act.

The golden ratio between challenges and skills does not only hold

true for human activities. Whenever I took our hunting dog, Hussar, for a walk in the open fields he liked to play a very simple game—the prototype of the most culturally widespread game of human children, escape and pursuit. He would run circles around me at top speed, with his tongue hanging out and his eyes warily watching every move I made, daring me to catch him. Occasionally I would take a lunge, and if I was lucky I got to touch him. Now the interesting part is that whenever I was tired, and moved halfheartedly, Hussar would run much tighter circles, making it relatively easy for me to catch him; on the other hand, if I was in good shape and willing to extend myself, he would enlarge the diameter of his circle. In this way, the difficulty of the game was kept constant. With an uncanny sense for the fine balancing of challenges and skills, he would make sure that the game would yield the maximum of enjoyment for us both.

The Merging of Action and Awareness

When all a person's relevant skills are needed to cope with the challenges of a situation, that person's attention is completely absorbed by the activity. There is no excess psychic energy left over to process any information but what the activity offers. All the attention is concentrated on the relevant stimuli.

As a result, one of the most universal and distinctive features of optimal experience takes place: people become so involved in what they are doing that the activity becomes spontaneous, almost automatic; they stop being aware-of themselves as separate from the actions they are performing.

A dancer describes how it feels when a performance is going well: "Your concentration is very complete. Your mind isn't wandering, you are not thinking of something else; you are totally involved in what you are doing. . . . Your energy is flowing very smoothly. You feel relaxed, comfortable, and energetic."

A rock climber explains how it feels when he is scaling a mountain: "You are so involved in what you are doing [that] you aren't thinking of yourself as separate from the immediate activity. . . . You don't see yourself as separate from what you are doing."

A mother who enjoys the time spent with her small daughter: "Her reading is the one thing that she's really into, and we read together. She reads to me, and I read to her, and that's a time when I sort of lose touch with the rest of the world, I'm totally absorbed in what I'm doing."

A chess player tells of playing in a tournament: "... the concentra-

tion is like breathing—you never think of it. The roof could fall in and, if it missed you, you would be unaware of it."

It is for this reason that we called the optimal experience "flow." The short and simple word describes well the sense of seemingly effortless movement. The following words from a poet and rock climber apply to all the thousands of interviews collected by us and by others over the years: "The mystique of rock climbing is climbing; you get to the top of a rock glad it's over but really wish it would go on forever. The justification of climbing is climbing, like the justification of poetry is writing; you don't conquer anything except things in yourself. . . . The act of writing justifies poetry. Climbing is the same: recognizing that you are a flow. The purpose of the flow is to keep on flowing, not looking for a peak or utopia but staying in the flow. It is not a moving up but a continuous flowing; you move up to keep the flow going. There is no possible reason for climbing except the climbing itself; it is a self-communication."

Although the flow experience appears to be effortless, it is far from being so. It often requires strenuous physical exertion, or highly disciplined mental activity. It does not happen without the application of skilled performance. Any lapse in concentration will erase it. And yet while it lasts consciousness works smoothly, action follows action seamlessly. In normal life, we keep interrupting what we do with doubts and questions. "Why am I doing this? Should I perhaps be doing something else?" Repeatedly we question the necessity of our actions, and evaluate critically the reasons for carrying them out. But in flow there is no need to reflect, because the action carries us forward as if by magic.

Clear Goals and Feedback

The reason it is possible to achieve such complete involvement in a flow experience is that goals are usually clear, and feedback immediate. A tennis player always knows what she has to do: return the ball into the opponent's court. And each time she hits the ball she knows whether she has done well or not. The chess player's goals are equally obvious: to mate the opponent's king before his own is mated. With each move, he can calculate whether he has come closer to this objective. The climber inching up a vertical wall of rock has a very simple goal in mind: to complete the climb without falling. Every second, hour after hour, he receives information that he is meeting that basic goal.

Of course, if one chooses a trivial goal, success in it does not provide enjoyment. If I set as my goal to remain alive while sitting on the living-room sofa, I also could spend days knowing that I was achiev-

ing it, just as the rock climber does. But this realization would not make me particularly happy, whereas the climber's knowledge brings exhilaration to his dangerous ascent.

Certain activities require a very long time to accomplish, yet the components of goals and feedback are still extremely important to them. One example was given by a sixty-two-year-old woman living in the Italian Alps, who said her most enjoyable experiences were taking care of the cows and tending the orchard: "I find special satisfaction in caring for the plants: I like to see them grow day by day. It is very beautiful." Although it involves a period of patient waiting, seeing the plants one has cared for grow provides a powerful feedback even in the urban apartments of American cities.

Another example is solo ocean cruising, in which a person alone might sail for weeks in a small boat without seeing land. Jim Macbeth, who did a study of flow in ocean cruising, comments on the excitement a sailor feels when, after days of anxiously scanning the empty reaches of water, he discerns the outline of the island he had been aiming for as it starts to rise over the horizon. One of the legendary cruisers describes this sensation as follows: "I . . . experienced a sense of satisfaction coupled with some astonishment that my observations of the very distant sun from an unsteady platform and the use of some simple tables . . . enable[d] a small island to be found with certainty after an ocean crossing." And another: "Each time, I feel the same mixture of astonishment, love, and pride as this new land is born which seems to have been created for me and by me."

The goals of an activity are not always as clear as those of tennis, and the feedback is often more ambiguous than the simple "I am not falling" information processed by the climber. A composer of music, for instance, may know that he wishes to write a song, or a flute concerto, but other than that, his goals are usually quite vague. And how does he know whether the notes he is writing down are "right" or "wrong"? The same situation holds true for the artist painting a picture, and for all activities that are creative or open-ended in nature. But these are all exceptions that prove the rule: unless a person learns to set goals and to recognize and gauge feedback in such activities, she will not enjoy them.

In some creative activities, where goals are not clearly set in advance, a person must develop a strong personal sense of what she intends to do. The artist might not have a visual image of what the finished painting should look like, but when the picture has progressed to a certain point, she should know whether this is what she wanted to

achieve or not. And a painter who enjoys painting must have internalized criteria for "good" or "bad" so that after each brush stroke she can say: "Yes, this works; no, this doesn't." Without such internal guidelines, it is impossible to experience flow.

Sometimes the goals and the rules governing an activity are invented, or negotiated on the spot. For example, teenagers enjoy impromptu interactions in which they try to "gross each other out," or tell tall stories, or make fun of their teachers. The goal of such sessions emerges by trial and error, and is rarely made explicit; often it remains below the participants' level of awareness. Yet it is clear that these activities develop their own rules and that those who take part have a clear idea of what constitutes a successful "move," and of who is doing well. In many ways this is the pattern of a good jazz band, or any improvisational group. Scholars or debaters obtain similar satisfaction when the "moves" in their arguments mesh smoothly, and produce the desired result.

What constitutes feedback varies considerably in different activities. Some people are indifferent to things that others cannot get enough of. For instance, surgeons who love doing operations claim that they wouldn't switch to internal medicine even if they were paid ten times as much as they are for doing surgery, because an internist never knows exactly how well he is doing. In an operation, on the other hand, the status of the patient is almost always clear: as long as there is no blood in the incision, for example, a specific procedure has been successful. When the diseased organ is cut out, the surgeon's task is accomplished; after that there is the suture that gives a gratifying sense of closure to the activity. And the surgeon's disdain for psychiatry is even greater than that for internal medicine: to hear surgeons talk, the psychiatrist might spend ten years with a patient without knowing whether the cure is helping him.

Yet the psychiatrist who enjoys his trade is also receiving constant feedback: the way the patient holds himself, the expression on his face, the hesitation in his voice, the content of the material he brings up in the therapeutic hour—all these bits of information are important clues the psychiatrist uses to monitor the progress of the therapy. The difference between a surgeon and a psychiatrist is that the former considers blood and excision the only feedback worth attending to, whereas the latter considers the signals reflecting a patient's state of mind to be significant information. The surgeon judges the psychiatrist to be soft because he is interested in such ephemeral goals; the psychiatrist thinks the surgeon crude for his concentration on mechanics.

The kind of feedback we work toward is in and of itself often unimportant: What difference does it make if I hit the tennis ball between the white lines, if I immobilize the enemy king on the chessboard, or if I notice a glimmer of understanding in my patient's eyes at the end of the therapeutic hour? What makes this information valuable is the symbolic message it contains: that I have succeeded in my goal. Such knowledge creates order in consciousness, and strengthens the structure of the self.

Almost any kind of feedback can be enjoyable, provided it is logically related to a goal in which one has invested psychic energy. If I were to set myself up to balance a walking stick on my nose, then the sight of the stick wobbling upright above my face would provide a brief enjoyable interlude. But each of us is temperamentally sensitive to a certain range of information that we learn to value more than most: other people do, and it is likely that we will consider feedback involving that information to be more relevant than others might.

For instance, some people are born with exceptional sensitivity to sound. They can discriminate among different tones and pitches, and recognize and remember combinations of sounds better than the general population. It is likely that such individuals will be attracted to playing with sounds; they will learn to control and shape auditory information. For them the most important feedback will consist in being able to combine sounds, to produce or reproduce rhythms and melodies. Composers, singers, performers, conductors, and music critics will develop from among them. In contrast, some are genetically predisposed to be unusually sensitive to other people, and they will learn to pay attention to the signals they send out. The feedback they will be looking for is the expression of human emotion. Some people have fragile selves that need constant reassurance, and for them the only information that counts is winning in a competitive situation. Others have invested so much in being liked that the only feedback they take into account is approval and admiration.

A good illustration of the importance of feedback is contained in the responses of a group of blind religious women interviewed by Professor Fausto Massimini's team of psychologists in Milan, Italy. Like the other respondents in our studies, they were asked to describe the most enjoyable experiences in their lives. For these women, many of whom had been sightless since birth, the most frequently mentioned flow experiences were the result of reading books in Braille, praying, doing handicrafts like knitting and binding books, and helping each other in case of sickness or other need. Of the over six hundred people inter-

viewed by the Italian team, these blind women stressed more than anyone else the importance of receiving clear feedback as a condition for enjoying whatever they were doing. Unable to see what was going on around them, they needed to know even more than sighted people whether what they were trying to accomplish was actually coming to pass.

Concentration on the Task at Hand

One of the most frequently mentioned dimensions of the flow experience is that, while it lasts, one is able to forget all the unpleasant aspects of life. This feature of flow is an important by-product of the fact that enjoyable activities require a complete focusing of attention on the task at hand—thus leaving no room in the mind for irrelevant information.

In normal everyday existence, we are the prey of thoughts and worries intruding unwanted in consciousness. Because most jobs, and home life in general, lack the pressing demands of flow experiences, concentration is rarely so intense that preoccupations and anxieties can be automatically ruled out. Consequently the ordinary state of mind involves unexpected and frequent episodes of entropy interfering with the smooth run of psychic energy. This is one reason why flow improves the quality of experience: the clearly structured demands of the activity impose order, and exclude the interference of disorder in consciousness.

A professor of physics who was an avid rock climber described his state of mind while climbing as follows: "It is as if my memory input has been cut off. All I can remember is the last thirty seconds, and all I can think ahead is the next five minutes." In fact, any activity that requires concentration has a similarly narrow window of time.

But it is not only the temporal focus that counts. What is even more significant is that only a very select range of information can be allowed into awareness. Therefore all the troubling thoughts that ordinarily keep passing through the mind are temporarily kept in abeyance. As a young basketball player explains: "The court—that's all that matters. . . . Sometimes out on the court I think of a problem, like fighting with my steady girl, and I think that's nothing compared to the game. You can think about a problem all day but as soon as you get in the game, the hell with it!" And another: "Kids my age, they think a lot but when you are playing basketball, that's all there is on your mind—just basketball. . . . Everything seems to follow right along."

A mountaineer expands on the same theme: "When you're [climbing] you're not aware of other problematic life situations. It

becomes a world unto its own, significant only to itself. It's a concentration thing. Once you're into the situation, it's incredibly real, and you're very much in charge of it. It becomes your total world."

A similar sensation is reported by a dancer: "I get a feeling that I don't get anywhere else. . . . I have more confidence in myself than any other time. Maybe an effort to forget my problems. Dance is like therapy. If I am troubled about something, I leave it out of the door as I go in [the dance studio]."

On a larger time scale, ocean cruising provides an equivalent merciful oblivion: "But no matter how many little discomforts there may be at sea, one's real cares and worries seem to drop out of sight as the land slips behind the horizon. Once we were at sea there was no point in worrying, there was nothing we could do about our problems till we reached the next port. . . . Life was, for a while, stripped of its artificialities; lother problems! seemed quite unimportant compared with the state of the wind and the sea and the length of the day's run."

Edwin Moses, the great hurdler, has this to say in describing the concentration necessary for a race: "Your mind has to be absolutely clear. The fact that you have to cope with your opponent, let lag, different foods, sleeping in hotels, and personal problems has to be erased from consciousness—as if they didn't exist."

Although Moses was talking about what it takes to win world-class sports events, he could have been describing the kind of concentration we achieve when we enjoy any activity. The concentration of the flow experience—together with clear goals and immediate feedback—provides order to consciousness, inducing the enjoyable condition of psychic negentropy.

The Paradox of Control

Enjoyment often occurs in games, sports, and other leisure activities that are distinct from ordinary life, where any number of bad things can happen. If a person loses a chess game or botches his hobby he need not worry; in "real" life, however, a person who mishandles a business deal may get fired, lose the mortgage on the house, and end up on public assistance. Thus the flow experience is typically described as involving a sense of control—or, more precisely, as lacking the sense of worry about losing control that is typical in many situations of normal life.

Here is how a dancer expresses this dimension of the flow experience: "A strong relaxation and calmness comes over me. I have no worries of failure. What a powerful and warm feeling it is! I want to expand, to hug the world. I feel enormous power to effect something of

grace and beauty." And a chess player: "... I have a general feeling of well-being, and that I am in complete control of my world."

What these respondents are actually describing is the *possibility*, rather than the *actuality*, of control. The ballet dancer may fall, break her leg, and never make the perfect turn, and the chess player may be defeated and never become a champion. But at least in principle, in the world of flow perfection is attainable.

This sense of control is also reported in enjoyable activities that involve serious risks, activities that to an outsider would seem to be much more potentially dangerous than the affairs of normal life. People who practice hang gliding, spelunking, rock climbing, race-car driving, deep-sea diving, and many similar sports for fun are purposefully placing themselves in situations that lack the safety nets of civilized life. Yet all these individuals report flow experiences in which a heightened sense of control plays an important part.

It is usual to explain the motivation of those who enjoy dangerous activities as some sort of pathological need: they are trying to exorcise a deep-seated fear, they are compensating, they are compulsively reenacting an Oedipal fixation, they are "sensation seekers." While such motives may be occasionally involved, what is most striking, when one actually speaks to specialists in risk, is how their enjoyment derives not from the danger itself, but from their ability to minimize it. So rather than a pathological thrill that comes from courting disaster, the positive emotion they enjoy is the perfectly healthy feeling of being able to control potentially dangerous forces.

The important thing to realize here is that activities that produce flow experiences, even the seemingly most risky ones, are so constructed as to allow the practitioner to develop sufficient skills to reduce the margin of error to as close to zero as possible. Rock climbers, for instance, recognize two sets of dangers: "objective" and "subjective" ones. The first kind are the unpredictable physical events that might confront a person on the mountain: a sudden storm, an avalanche, a falling rock, a drastic drop in temperature. One can prepare oneself against these threats, but they can never be completely foreseen. Subjective dangers are those that arise from the climber's lack of skill—including the inability to estimate correctly the difficulty of a climb in relation to one's ability.

The whole point of climbing is to avoid objective dangers as much as possible, and to eliminate subjective dangers entirely by rigorous discipline and sound preparation. As a result, climbers genuinely believe that climbing the Matterhorn is safer than crossing a street in Manhat-

tan, where the objective dangers—taxi drivers, bicycle messengers, buses, muggers—are far less predictable than those on the mountain, and where personal skills have less chance to ensure the pedestrian's safety.

As this example illustrates, what people enjoy is not the sense of being in control, but the sense of *exercising* control in difficult situations. It is not possible to experience a feeling of control unless one is willing to give up the safety of protective routines. Only when a doubtful outcome is at stake, and one is able to influence that outcome, can a person really know whether she is in control.

One type of activity seems to constitute an exception. Games of chance are enjoyable, yet by definition they are based on random outcomes presumably not affected by personal skills. The spin of a roulette wheel or the turn of a card in blackjack cannot be controlled by the player. In this case, at least, the sense of control must be irrelevant to the experience of enjoyment.

The "objective" conditions, however, happen to be deceptive, for it is actually the case that gamblers who enjoy games of hazard are subjectively convinced that their skills do play a major role in the outcome. In fact, they tend to stress the issue of control even more than practitioners of activities where skills obviously allow greater control. Poker players are convinced it is their ability, and not chance, that makes them win; if they lose they are much more inclined to credit bad luck, but even in defeat they are willing to look for a personal lapse to explain the outcome. Roulette players develop elaborate systems to predict the turn of the wheel. In general, players of games of chance often believe that they have the gift of seeing into the future, at least within the restricted set of goals and rules that defines their game. And this most ancient feeling of control—whose precursors include the rituals of divination so prevalent in every culture—is one of the greatest attractions the experience of gambling offers.

This sense of being in a world where entropy is suspended explains in part why flow-producing activities can become so addictive. Novelists have often written on the theme of chess as a metaphor for escape from reality. Vladimir Nabokov's short story "The Luchin Defense" describes a young chess genius so involved in the game that the rest of his life—his marriage, his friendships, his livelihood—is going by the boards. Luchin tries to cope with these problems, but he is unable to see them except in terms of chess situations. His wife is the White Queen, standing on the fifth square of the third file, threatened by the Black Bishop, who is Luchin's agent—and so forth. In trying to solve

his personal conflicts Luchin turns to chess strategy, and endeavors to invent the "Luchin defense," a set of moves that will make him invulnerable to outside attacks. As his relationships in real life disintegrate, Luchin has a series of hallucinations in which the important people around him become pieces on a huge chessboard, trying to immobilize him. Finally he has a vision of the perfect defense against his problems—and jumps out of the hotel window. Such stories about chess are not so farfetched; many champions, including the first and the last great American chess masters, Paul Morphy and Bobby Fischer, became so comfortable with the beautifully clear-cut and logically ordered world of chess that they turned their backs on the messy confusion of the "real" world.

The exhilaration gamblers feel in "figuring out" random chance is even more notorious. Early ethnographers have described North American Plains Indians so hypnotically involved in gambling with buffalo rib bones that losers would often leave the tepee without clothes in the dead of winter, having wagered away their weapons, horses, and wives as well. Almost any enjoyable activity can become addictive, in the sense that instead of being a conscious choice, it becomes a necessity that interferes with other activities. Surgeons, for instance, describe operations as being addictive, "like taking heroin."

When a person becomes so dependent on the ability to control an enjoyable activity that he cannot pay attention to anything else, then he loses the ultimate control: the freedom to determine the content of consciousness. Thus enjoyable activities that produce flow have a potentially negative aspect: while they are capable of improving the quality of existence by creating order in the mind, they can become addictive, at which point the self becomes captive of a certain kind of order, and is then unwilling to cope with the ambiguities of life.

The Loss of Self-Consciousness

We have seen earlier that when an activity is thoroughly engrossing, there is not enough attention left over to allow a person to consider either the past or the future, or any other temporarily irrelevant stimuli. One item that disappears from awareness deserves special mention, because in normal life we spend so much time thinking about it: our own self. Here is a climber describing this aspect of the experience: "It's a Zen feeling, like meditation or concentration. One thing you're after is the one-pointedness of mind. You can get your ego mixed up with climbing in all sorts of ways and it isn't necessarily enlightening. But when things become automatic, it's like an egoless thing, in a way.

Somehow the right thing is done without you ever thinking about it or doing anything at all. . . . It just happens. And yet you're more concentrated." Or, in the words of a famous long-distance ocean cruiser: "So one forgets oneself, one forgets everything, seeing only the play of the boat with the sea, the play of the sea around the boat, leaving aside everything not essential to that game."

The loss of the sense of a self separate from the world around it is sometimes accompanied by a feeling of union with the environment, whether it is the mountain, a team, or, in the case of this member of a Japanese motorcycle gang, the "run" of hundreds of cycles roaring down the streets of Kyoto: "I understand something, when all of our feelings get tuned up. When running, we are not in complete harmony at the start. But if the Run begins to go well, all of us, all of us feel for the others. How can I say this? . . . When our minds become one. At such a time, it's a real pleasure. . . . When all of us become one, I understand something. . . . All of a sudden I realize, 'Oh, we're one' and think, 'If we speed as fast as we can, it will become a real Run.' . . . When we realize that we become one flesh, it's supreme. When we get high on speed. At such a moment, it's really super."

This "becoming one flesh" so vividly described by the Japanese teenager is a very real feature of the flow experience. Persons report feeling it as concretely as they feel relief from hunger or from pain. It is a greatly rewarding experience, but as we shall see later on, one that presents its own dangers.

Preoccupation with the self consumes psychic energy because in everyday life we often feel threatened. Whenever we are threatened we need to bring the image we have of ourselves back into awareness, so we can find out whether or not the threat is serious, and how we should meet it. For instance, if walking down the street I notice some people turning back and looking at me with grins on their faces, the normal thing to do is immediately to start worrying: "Is there something wrong? Do I look funny? Is it the way I walk, or is my face smudged?" Hundreds of times every day we are reminded of the vulnerability of our self. And every time this happens psychic energy is lost trying to restore order to consciousness.

But in flow there is no room for self-scrutiny. Because enjoyable activities have clear goals, stable rules, and challenges well matched to skills, there is little opportunity for the self to be threatened. When a climber is making a difficult ascent, he is totally taken up in the mountaineering role. He is 100 percent a climber, or he would not survive. There is no way for anything or anybody to bring into question any

other aspect of his self. Whether his face is smudged makes absolutely no difference. The only possible threat is the one that comes from the mountain—but a good climber is well trained to face that threat, and does not need to bring the self into play in the process.

The absence of the self from consciousness does not mean that a person in flow has given up the control of his psychic energy, or that she is unaware of what happens in her body or in her mind. In fact the opposite is usually true. When people first learn about the flow experience they sometimes assume that lack of self-consciousness has something to do with a passive obliteration of the self, a "going with the flow" Southern California-style. But in fact the optimal experience involves a very active role for the self. A violinist must be extremely aware of every movement of her fingers, as well as of the sound entering her ears, and of the total form of the piece she is playing, both analytically, note by note, and holistically, in terms of its overall design. A good runner is usually aware of every relevant muscle in his body, of the rhythm of his breathing, as well as of the performance of his competitors within the overall strategy of the race. A chess player could not enjoy the game if he were unable to retrieve from his memory, at will, previous positions, past combinations.

So loss of self-consciousness does not involve a loss of self, and certainly not a loss of consciousness, but rather, only a loss of consciousness of the self. What slips below the threshold of awareness is the concept of self, the information we use to represent to ourselves who we are. And being able to forget temporarily who we are seems to be very enjoyable. When not preoccupied with our selves, we actually have a chance to expand the concept of who we are. Loss of self-consciousness can lead to self-transcendence, to a feeling that the boundaries of our being have been pushed forward.

This feeling is not just a fancy of the imagination, but is based on a concrete experience of close interaction with some Other, an interaction that produces a rare sense of unity with these usually foreign entities. During the long watches of the night the solitary sailor begins to feel that the boat is an extension of himself, moving to the same rhythms toward a common goal. The violinist, wrapped in the stream of sound she helps to create, feels as if she is part of the "harmony of the spheres." The climber, focusing all her attention on the small irregularities of the rock wall that will have to support her weight safely, speaks of the sense of kinship that develops between fingers and rock, between the frail body and the context of stone, sky, and wind. In a chess tournament, players whose attention has been riveted, for hours,

to the logical battle on the board claim that they feel as if they have been merged into a powerful "field of force" clashing with other forces in some nonmaterial dimension of existence. Surgeons say that during a difficult operation they have the sensation that the entire operating team is a single organism, moved by the same purpose; they describe it as a "ballet" in which the individual is subordinated to the group performance, and all involved share in a feeling of harmony and power.

One could treat these testimonials as poetic metaphors and leave them at that. But it is important to realize that they refer to experiences that are just as real as being hungry, or as concrete as bumping into a wall. There is nothing mysterious or mystical about them. When a person invests all her psychic energy into an interaction—whether it is with another person, a boat, a mountain, or a piece of music—she in effect becomes part of a system of action greater than what the individual self had been before. This system takes its form from the rules of the activity; its energy comes from the person's attention. But it is a real system—subjectively as real as being part of a family, a corporation, or a team—and the self that is part of it expands its boundaries and becomes more complex than what it had been.

This growth of the self occurs only if the interaction is an enjoyable one, that is, if it offers nontrivial opportunities for action and requires a constant perfection of skills. It is also possible to lose oneself in systems of action that demand nothing but faith and allegiance. Fundamental religions, mass movements, and extremist political parties also offer opportunities for self-transcendence that millions are eager to accept. They also provide a welcome extension of the boundaries of the self, a feeling that one is involved in something great and powerful. The true believer also becomes part of the system in concrete terms, because his psychic energy will be focused and shaped by the goals and rules of his belief. But the true believer is not really interacting with the belief system; he usually lets his psychic energy be absorbed by it. From this submission nothing new can come; consciousness may attain a welcome order, but it will be an order imposed rather than achieved. At best the self of the true believer resembles a crystal: strong and beautifully symmetrical, but very slow to grow.

There is one very important and at first apparently paradoxical relationship between losing the sense of self in a flow experience, and having it emerge stronger afterward. It almost seems that occasionally giving up self-consciousness is necessary for building a strong self-concept. Why this should be so is fairly clear. In flow a person is challenged to do her best, and must constantly improve her skills. At the time, she

doesn't have the opportunity to reflect on what this means in terms of the self—if she did allow herself to become self-conscious, the experience could not have been very deep. But afterward, when the activity is over and self-consciousness has a chance to resume, the self that the person reflects upon is not the same self that existed before the flow experience: it is now enriched by new skills and fresh achievements.

The Transformation of Time

One of the most common descriptions of optimal experience is that time no longer seems to pass the way it ordinarily does. The objective, external duration we measure with reference to outside events like night and day, or the orderly progression of clocks, is rendered irrelevant by the rhythms dictated by the activity. Often hours seem to pass by in minutes; in general, most people report that time seems to pass much faster. But occasionally the reverse occurs: Ballet dancers describe how a difficult turn that takes less than a second in real time stretches out for what seems like minutes: "Two things happen. One is that it seems to pass really fast in one sense. After it's passed, it seems to have passed really fast. I see that it's 1:00 in the morning, and I say: 'Aha, just a few minutes ago it was 8:00.' But then while I'm dancing . . . it seems like it's been much longer than maybe it really was." The safest generalization to make about this phenomenon is to say that during the flow experience the sense of time bears little relation to the passage of time as measured by the absolute convention of the clock.

But here, too, there are exceptions that prove the rule. An outstanding open-heart surgeon who derives a deep enjoyment from his work is well known for his ability to tell the exact time during an operation with only half a minute margin of error, without consulting a watch. But in his case timing is one of the essential challenges of the job: since he is called only to do a very small but extremely difficult part of the operation, he is usually involved in several operations simultaneously, and has to walk from one case to the next, making sure that he is not holding up his colleagues responsible for the preliminary phases. A similar skill is often found among practitioners of other activities where time is of the essence, for instance, runners and racers. In order to pace themselves precisely in a competition, they have to be very sensitive to the passage of seconds and minutes. In such cases the ability to keep track of time becomes one of the skills necessary to do well in the activity, and thus it contributes to, rather than detracts from, the enjoyment of the experience.

But most flow activities do not depend on clock time; like baseball,

they have their own pace, their own sequences of events marking transitions from one state to another without regard to equal intervals of duration. It is not clear whether this dimension of flow is just an epiphenomenon—a by-product of the intense concentration required for the activity at hand—or whether it is something that contributes in its own right to the positive quality of the experience. Although it seems likely that losing track of the clock is not one of the major elements of enjoyment, freedom from the tyranny of time does add to the exhilaration we feel during a state of complete involvement.

THE AUTOTELIC EXPERIENCE

The key element of an optimal experience is that it is an end in itself. Even if initially undertaken for other reasons, the activity that consumes us becomes intrinsically rewarding. Surgeons speak of their work: "It is so enjoyable that I would do it even if I didn't have to." Sailors say: "I am spending a lot of money and time on this boat, but it is worth it—nothing quite compares with the feeling I get when I am out sailing."

The term "autotelic" derives from two Greek words, *auto* meaning self, and *telos* meaning goal. It refers to a self-contained activity, one that is done not with the expectation of some future benefit, but simply because the doing itself is the reward. Playing the stock market in order to make money is not an autotelic experience; but playing it in order to prove one's skill at foretelling future trends is—even though the outcome in terms of dollars and cents is exactly the same. Teaching children in order to turn them into good citizens is not autotelic, whereas teaching them because one enjoys interacting with children is. What transpires in the two situations is ostensibly identical; what differs is that when the experience is autotelic, the person is paying attention to the activity for its own sake; when it is not, the attention is focused on its consequences.

Most things we do are neither purely autotelic nor purely exotelic (as we shall call activities done for external reasons only), but are a combination of the two. Surgeons usually enter into their long period of training because of exotelic expectations: to help people, to make money, to achieve prestige. If they are lucky, after a while they begin to enjoy their work, and then surgery becomes to a large extent also autotelic.

Some things we are initially forced to do against our will turn out in the course of time to be intrinsically rewarding. A friend of mine, with whom I worked in an office many years ago, had a great gift. Whenever

the work got to be particularly boring, he would look up with a glazed look in his half-closed eyes, and he would start to hum a piece of music—a Bach chorale, a Mozart concerto, a Beethoven symphony. But humming is a pitifully inadequate description of what he did. He reproduced the entire piece, imitating with his voice the principal instruments involved in the particular passage: now he wailed like a violin, now he crooned like a bassoon, now he blared like a baroque trumpet. We in the office listened entranced, and resumed work refreshed. What is curious is the way my friend had developed this gift. Since the age of three, he had been taken by his father to concerts of classical music. He remembers having been unspeakably bored, and occasionally falling asleep in the seat, to be awakened by a sharp slap. He grew to hate concerts, classical music, and presumably his father—but year after year he was forced to repeat this painful experience. Then one evening, when he was about seven years old, during the overture to a Mozart opera, he had what he described as an ecstatic insight: he suddenly discerned the melodic structure of the piece, and had an overwhelming sense of a new world opening up before him. It was the three years of painful listening that had prepared him for this epiphany, years during which his musical skills had developed, however unconsciously, and made it possible for him to understand the challenge Mozart had built into the music.

Of course he was lucky; many children never reach the point of recognizing the possibilities of the activity into which they are forced, and end up disliking it forever. How many children have come to hate classical music because their parents forced them to practice an instrument? Often children—and adults—need external incentives to take the first steps in an activity that requires a difficult restructuring of attention. Most enjoyable activities are not natural; they demand an effort that initially one is reluctant to make. But once the interaction starts to provide feedback to the person's skills, it usually begins to be intrinsically rewarding.

An autotelic experience is very different from the feelings we typically have in the course of life. So much of what we ordinarily do has no value in itself, and we do it only because we have to do it, or because we expect some future benefit from it. Many people feel that the time they spend at work is essentially wasted—they are alienated from it, and the psychic energy invested in the job does nothing to strengthen their self. For quite a few people free time is also wasted. Leisure provides a relaxing respite from work, but it generally consists of passively absorbing information, without using any skills or exploring new opportunities

for action. As a result life passes in a sequence of boring and anxious experiences over which a person has little control.

The autotelic experience, or flow, lifts the course of life to a different level. Alienation gives way to involvement, enjoyment replaces boredom, helplessness turns into a feeling of control, and psychic energy works to reinforce the sense of self, instead of being lost in the service of external goals. When experience is intrinsically rewarding life is justified in the present, instead of being held hostage to a hypothetical future gain.

But, as we have already seen in the section dealing with the sense of control, one must be aware of the potentially addictive power of flow. We should reconcile ourselves to the fact that nothing in the world is entirely positive; every power can be misused. Love may lead to cruelty, science can create destruction, technology unchecked produces pollution. Optimal experience is a form of energy, and energy can be used either to help or to destroy. Fire warms or burns; atomic energy can generate electricity or it can obliterate the world. Energy is power, but power is only a means. The goals to which it is applied can make life either richer or more painful.

The Marquis de Sade perfected the infliction of pain into a form of pleasure, and in fact, cruelty is a universal source of enjoyment for people who have not developed more sophisticated skills. Even in societies that are called "civilized" because they try to make life enjoyable without interfering with anyone's well-being, people are attracted to violence. Gladiatorial combat amused the Romans, Victorians paid money to see rats being torn up by terriers, Spaniards approach the killing of bulls with reverence, and boxing is a staple of our own culture.

Veterans from Vietnam or other wars sometimes speak with nostalgia about front-line action, describing it as a flow experience. When you sit in a trench next to a rocket launcher, life is focused very clearly: the goal is to destroy the enemy before he destroys you; good and bad become self-evident; the means of control are at hand; distractions are eliminated. Even if one hates war, the experience can be more exhilarating than anything encountered in civilian life.

Criminals often say things such as, "If you showed me something I can do that's as much fun as breaking into a house at night, and lifting the jewelry without waking anyone up, I would do it." Much of what we label juvenile delinquency—car theft, vandalism, rowdy behavior in general—is motivated by the same need to have flow experiences not available in ordinary life. As long as a significant segment of society has few opportunities to encounter meaningful challenges, and few chances

to develop the skills necessary to benefit from them, we must expect that violence and crime will attract those who cannot find their way to more complex autotelic experiences.

This issue becomes even more complicated when we reflect that respected scientific and technological activities, which later assume a highly ambiguous and perhaps even horrifying aspect, are originally very enjoyable. Robert Oppenheimer called his work on the atomic bomb a "sweet problem," and there is no question that the manufacture of nerve gas or the planning of Star Wars can be deeply engrossing to those involved in them.

The flow experience, like everything else, is not "good" in an absolute sense. It is good only in that it has the potential to make life more rich, intense, and meaningful; it is good because it increases the strength and complexity of the self. But whether the consequence of any particular instance of flow is good in a larger sense needs to be discussed and evaluated in terms of more inclusive social criteria. The same is true, however, of all human activities, whether science, religion, or politics. A particular religious belief may benefit a person or a group, but repress many others. Christianity helped to integrate the decaying ethnic communities of the Roman Empire, but it was instrumental in dissolving many cultures with which it later came into contact. A given scientific advance may be good for science and a few scientists, but bad for humanity as a whole. It is an illusion to believe that any solution is beneficial for all people and all times; no human achievement can be taken as the final word. Jefferson's uncomfortable dictum "Eternal vigilance is the price of liberty" applies outside the fields of politics as well; it means that we must constantly reevaluate what we do, lest habits and past wisdom blind us to new possibilities.

It would be senseless, however, to ignore a source of energy because it can be misused. If mankind had tried to ban fire because it could be used to burn things down, we would not have grown to be very different from the great apes. As Democritus said so simply many centuries ago: "Water can be both good and bad, useful and dangerous. To the danger, however, a remedy has been found: learning to swim." To swim in this case involves learning to distinguish the useful and the harmful forms of flow, and then making the most of the former while placing limits on the latter. The task is to learn how to enjoy everyday life without diminishing other people's chances to enjoy theirs.

THE CONDITIONS OF FLOW

WE HAVE SEEN HOW PEOPLE DESCRIBE the common characteristics of optimal experience: a sense that one's skills are adequate to cope with the challenges at hand, in a goal-directed, rule-bound action system that provides clear clues as to how well one is performing. Concentration is so intense that there is no attention left over to think about anything irrelevant, or to worry about problems. Self-consciousness disappears, and the sense of time becomes distorted. An activity that produces such experiences is so gratifying that people are willing to do it for its own sake, with little concern for what they will get out of it, even when it is difficult, or dangerous.

But how do such experiences happen? Occasionally flow may occur by chance, because of a fortunate coincidence of external and internal conditions. For instance, friends may be having dinner together, and someone brings up a topic that involves everyone in the conversation. One by one they begin to make jokes and tell stories, and pretty soon all are having fun and feeling good about one another. While such events may happen spontaneously, it is much more likely that flow will result either from a structured activity, or from an individual's ability to make flow occur, or both.

Why is playing a game enjoyable, while the things we have to do every day—like working or sitting at home—are often so boring? And why is it that one person will experience joy even in a concentration

camp, while another gets the blabs while vacationing at a fancy resort? Answering these questions will make it easier to understand how experience can be shaped to improve the quality of life. This chapter will explore those particular activities that are likely to produce optimal experiences, and the personal traits that help people achieve flow easily.

FLOW ACTIVITIES

When describing optimal experience in this book, we have given as examples such activities as making music, rock climbing, dancing, sailing, chess, and so forth. What makes these activities conducive to flow is that they were *designed* to make optimal experience easier to achieve. They have rules that require the learning of skills, they set up goals, they provide feedback, they make control possible. They facilitate concentration and involvement by making the activity as distinct as possible from the so-called "paramount reality" of everyday existence. For example, in each sport participants dress up in eye-catching uniforms and enter special enclaves that set them apart temporarily from ordinary mortals. For the duration of the event, players and spectators cease to act in terms of common sense, and concentrate instead on the peculiar reality of the game.

Such *flow activities* have as their primary function the provision of enjoyable experiences. Play, art, pageantry, ritual, and sports are some examples. Because of the way they are constructed, they help participants and spectators achieve an ordered state of mind that is highly enjoyable.

Roger Caillois, the French psychological anthropologist, has divided the world's games (using that word in its broadest sense to include every form of pleasurable activity) into four broad classes, depending on the kind of experiences they provide. *Agon* includes games that have competition as their main feature, such as most sports and athletic events; *alea* is the class that includes all games of chance, from dice to bingo; *ilinx*, or vertigo, is the name he gives to activities that alter consciousness by scrambling ordinary perception, such as riding a merry-go-round or skydiving; and *mimicry* is the group of activities in which alternative realities are created, such as dance, theater, and the arts in general.

Using this scheme, it can be said that games offer opportunities to go beyond the boundaries of ordinary experience in four different ways. In agonistic games, the participant must stretch her skills to meet the challenge provided by the skills of the opponents. The roots of the

word "compete" are the Latin *con petre*, which meant "to seek to gether." What each person seeks is to actualize her potential, and this task is made easier when others force us to do our best. Of course, competition improves experience only as long as attention is focused primarily on the activity itself. If extrinsic goals—such as beating the opponent, wanting to impress an audience, or obtaining a big professional contract—are what one is concerned about, then competition is likely to become a distraction, rather than an incentive to focus consciousness on what is happening.

Aleatory games are enjoyable because they give the illusion of controlling the inscrutable future. The Plains Indians shuffled the marked rib bones of buffaloes to predict the outcome of the next hunt, the Chinese interpreted the pattern in which sticks fell, and the Ashanti of East Africa read the future in the way their sacrificed chickens died. Divination is a universal feature of culture, an attempt to break out of the constraints of the present and get a glimpse of what is going to happen. Games of chance draw on the same need. The buffalo ribs become dice, the sticks of the I Ching become playing cards, and the ritual of divination becomes gambling—a secular activity in which people try to outsmart each other or try to outguess fate.

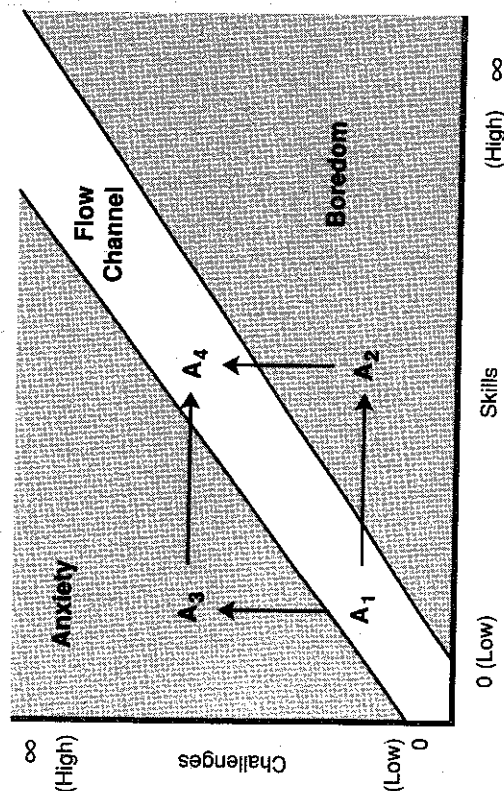
Vertigo is the most direct way to alter consciousness. Small children love to turn around in circles until they are dizzy; the whirling dervishes in the Middle East go into states of ecstasy through the same means. Any activity that transforms the way we perceive reality is enjoyable, a fact that accounts for the attraction of "consciousness-expanding" drugs of all sorts, from magic mushrooms to alcohol to the current Pandora's box of hallucinogenic chemicals. But consciousness cannot be expanded; all we can do is shuffle its content, which gives us the impression of having broadened it somehow. The price of most artificially induced alterations, however, is that we lose control over that very consciousness we were supposed to expand.

Mimicry makes us feel as though we are more than what we actually are through fantasy, pretense, and disguise. Our ancestors, as they danced wearing the masks of their gods, felt a sense of powerful identification with the forces that ruled the universe. By dressing like a deer, the Yaqui Indian dancer felt at one with the spirit of the animal he impersonated. The singer who blends her voice in the harmony of a choir finds chills running down her spine as she feels at one with the beautiful sound she helps create. The little girl playing with her doll and her brother pretending to be a cowboy also stretch the limits of their ordinary experience, so that they become, temporarily, someone differ-

ent and more powerful—as well as learn the gender-typed adult roles of their society.

In our studies, we found that every flow activity, whether it involved competition, chance, or any other dimension of experience, had this in common: It provided a sense of discovery, a creative feeling of transporting the person into a new reality. It pushed the person to higher levels of performance, and led to previously undreamed-of states of consciousness. In short, it transformed the self by making it more complex. In this growth of the self lies the key to flow activities.

A simple diagram might help explain why this should be the case. Let us assume that the figure below represents a specific activity—for example, the game of tennis. The two theoretically most important dimensions of the experience, challenges and skills, are represented on the two axes of the diagram. The letter A represents Alex, a boy who is learning to play tennis. The diagram shows Alex at four different points in time. When he first starts playing (A_1), Alex has practically no skills, and the only challenge he faces is hitting the ball over the net. This is not a very difficult feat, but Alex is likely to enjoy it because the difficulty is just right for his rudimentary skills. So at this point he will probably be in flow. But he cannot stay there long. After a while, if he keeps practicing, his skills are bound to improve, and then he will grow



Why the complexity of consciousness increases as a result of flow experiences

bored just batting the ball over the net (A_2). Or it might happen that he meets a more practiced opponent, in which case he will realize that there are much harder challenges for him than just lobbing the ball—at that point, he will feel some anxiety (A_3) concerning his poor performance.

Neither boredom nor anxiety are positive experiences, so Alex will be motivated to return to the flow state. How is he to do it? Glancing again at the diagram, we see that if he is bored (A_2) and wishes to be in flow again, Alex has essentially only one choice: to increase the challenges he is facing. (He also has a second choice, which is to give up tennis altogether—in which case A would simply disappear from the diagram.) By setting himself a new and more difficult goal that matches his skills—for instance, to beat an opponent just a little more advanced than he is—Alex would be back in flow (A_4).

If Alex is anxious (A_3), the way back to flow requires that he increase his skills. Theoretically he could also reduce the challenges he is facing, and thus return to flow where he started (in A_1), but in practice it is difficult to ignore challenges once one is aware that they exist.

The diagram shows that both A_1 and A_4 represent situations in which Alex is in flow. Although both are equally enjoyable, the two states are quite different in that A_4 is a more complex experience than A_1 . It is more complex because it involves greater challenges, and demands greater skills from the player.

But A_4 , although complex and enjoyable, does not represent a stable situation, either. As Alex keeps playing, either he will become bored by the stale opportunities he finds at that level, or he will become anxious and frustrated by his relatively low ability. So the motivation to enjoy himself again will push him to get back into the flow channel, but now at a level of complexity even higher than A_4 .

It is this dynamic feature that explains why flow activities lead to growth and discovery. One cannot enjoy doing the same thing at the same level for long. We grow either bored or frustrated; and then the desire to enjoy ourselves again pushes us to stretch our skills, or to discover new opportunities for using them.

It is important, however, not to fall into the mechanistic fallacy and expect that, just because a person is objectively involved in a flow activity, she will necessarily have the appropriate experience. It is not only the "real" challenges presented by the situation that count, but those that the person is aware of. It is not skills we actually have that determine how we feel, but the ones we think we have. One person may respond to the challenge of a mountain peak but remain indifferent to

the opportunity to learn to play a piece of music; the next person may jump at the chance to learn the music and ignore the mountain. How we feel at any given moment of a flow activity is strongly influenced by the objective conditions; but consciousness is still free to follow its own assessment of the case. The rules of games are intended to direct psychic energy in patterns that are enjoyable, but whether they do so or not is ultimately up to us. A professional athlete might be "playing" football without any of the elements of flow being present: he might be bored, self-conscious, concerned about the size of his contract rather than the game. And the opposite is even more likely—that a person will deeply enjoy activities that were intended for other purposes. To many people activities like working or raising children provide more flow than playing a game or painting a picture, because these individuals have learned to perceive opportunities in such mundane tasks that others do not see.

During the course of human evolution, every culture has developed activities designed primarily to improve the quality of experience. Even the least technologically advanced societies have some form of art, music, dance, and a variety of games that children and adults play. There are natives of New Guinea who spend more time looking in the jungle for the colorful feathers they use for decoration in their ritual dances than they spend looking for food. And this is by no means a rare example: art, play, and ritual probably occupy more time and energy in most cultures than work.

While these activities may serve other purposes as well, the fact that they provide enjoyment is the main reason they have survived. Humans began decorating caves at least thirty thousand years ago. These paintings surely had religious and practical significance. However, it is likely that the major reason d'être of art was the same in the Paleolithic era as it is now—namely, it was a source of flow for the painter and for the viewer.

In fact, flow and religion have been intimately connected from earliest times. Many of the optimal experiences of mankind have taken place in the context of religious rituals. Not only art but drama, music, and dance had their origins in what we now would call "religious" settings; that is, activities aimed at connecting people with supernatural powers and entities. The same is true of games. One of the earliest ball games, a form of basketball played by the Maya, was part of their religious celebrations, and so were the original Olympic games. This connection is not surprising, because what we call religion is actually the oldest and most ambitious attempt to create order in consciousness. It therefore makes sense that religious rituals would be a profound source of enjoyment.

In modern times art, play, and life in general have lost their supernatural moorings. The cosmic order that in the past helped interpret and give meaning to human history has broken down into disconnected fragments. Many ideologies are now competing to provide the best explanation for the way we behave: the law of supply and demand and the "invisible hand" regulating the free market seek to account for our rational economic choices; the law of class conflict that underlies historical materialism tries to explain our irrational political actions; the genetic competition on which sociobiology is based would explain why we help some people and exterminate others; behaviorism's law of effect offers to explain how we learn to repeat pleasurable acts, even when we are not aware of them. These are some of the modern "religions" rooted in the social sciences. None of them—with the partial exception of historical materialism, itself a dwindling creed—commands great popular support, and none has inspired the aesthetic visions or enjoyable rituals that previous models of cosmic order had spawned.

As contemporary flow activities are secularized, they are unlikely to link the actor with powerful meaning systems such as those the Olympic games or the Mayan ball games provided. Generally their content is purely hedonic: we expect them to improve how we feel, physically or mentally, but we do not expect them to connect us with the gods. Nevertheless, the steps we take to improve the quality of experience are very important for the culture as a whole. It has long been recognized that the productive activities of a society are a useful way of describing its character: thus we speak of hunting-gathering, pastoral, agricultural, and technological societies. But because flow activities are freely chosen and more intimately related to the sources of what is ultimately meaningful, they are perhaps more precise indicators of who we are.

FLOW AND CULTURE

A major element of the American experiment in democracy has been to make the pursuit of happiness a conscious political goal—indeed, a responsibility of the government. Although the Declaration of Independence may have been the first official political document to spell out this goal explicitly, it is probably true that no social system has ever survived long unless its people had some hope that their government would help them achieve happiness. Of course there have been many repressive cultures whose populace was willing to tolerate even extremely wretched rulers. If the slaves who built the Pyramids rarely revolted it was because compared to the alternatives they perceived, working as slaves for the

despotic Pharaohs offered a marginally more hopeful future.

Over the past few generations social scientists have grown extremely unwilling to make value judgments about cultures. Any comparison that is not strictly factual runs the risk of being interpreted as invidious. It is bad form to say that one culture's practice, or belief, or institution is in any sense better than another's. This is "cultural relativism," a stance anthropologists adopted in the early part of this century as a reaction against the overly smug and ethnocentric assumptions of the colonial Victorian era, when the Western industrial nations considered themselves to be the pinnacle of evolution, better in every respect than technologically less developed cultures. This naive confidence of our supremacy is long past. We might still object if a young Arab drives a truck of explosives into an embassy, blowing himself up in the process; but we can no longer feel morally superior in condemning his belief that Paradise has special sections reserved for self-immolating warriors. We have come to accept that our morality simply no longer has currency outside our own culture. According to this new dogma, it is inadmissible to apply one set of values to evaluate another. And since every evaluation across cultures must necessarily involve at least one set of values foreign to one of the cultures being evaluated, the very possibility of comparison is ruled out.

If we assume, however, that the desire to achieve optimal experience is the foremost goal of every human being, the difficulties of interpretation raised by cultural relativism become less severe. Each social system can then be evaluated in terms of how much psychic entropy it causes, measuring that disorder not with reference to the ideal order of one or another belief system, but with reference to the goals of the members of that society. A starting point would be to say that one society is "better" than another if a greater number of its people have access to experiences that are in line with their goals. A second essential criterion would specify that these experiences should lead to the growth of the self on an individual level, by allowing as many people as possible to develop increasingly complex skills.

It seems clear that cultures differ from one another in terms of the degree of the "pursuit of happiness" they make possible. The quality of life in some societies, in some historical periods, is distinctly better than in others. Toward the end of the eighteenth century, the average Englishman was probably much worse off than he had been earlier, or would be again a hundred years later. The evidence suggests that the Industrial Revolution not only shortened the life spans of members of several generations, but made them more nasty and brutish as well. It

is hard to imagine that weavers swallowed by the "Satanic mills" at five years of age, who worked seventy hours a week or more until they dropped dead from exhaustion, could feel that what they were getting out of life was what they wanted, regardless of the values and beliefs they shared.

To take another example, the culture of the Dobu islanders, as described by the anthropologist Reo Fortune, is one that encouraged constant fear of sorcery, mistrust among even the closest relatives, and vindictive behavior. Just going to the bathroom was a major problem, because it involved stepping out into the bush, where everybody expected to be attacked by bad magic when alone among the trees. The Dobuans didn't seem to "like" these characteristics so pervasive in their everyday experience, but they were unaware of alternatives. They were caught in a web of beliefs and practices that had evolved through time, and that made it very difficult for them to experience psychic harmony. Many ethnographic accounts suggest that built-in psychic entropy is more common in preliterate cultures than the myth of the "noble savage" would suggest. The Ik of Uganda, unable to cope with a deteriorating environment that no longer provides enough food for them to survive, have institutionalized selfishness beyond the wildest dreams of capitalism. The Yononamo of Venezuela, like many other warrior tribes, worship violence more than our militaristic superpowers, and find nothing as enjoyable as a good bloody raid on a neighboring village. Laughing and smiling were almost unknown in the Nigerian tribe beset by sorcery and intrigue that Laura Bohannan studied.

There is no evidence that any of these cultures *chose* to be selfish, violent, or fearful. Their behavior does not make them happier; on the contrary, it causes suffering. Such practices and beliefs, which interfere with happiness, are neither inevitable nor necessary; they evolved by chance, as a result of random responses to accidental conditions. But once they become part of the norms and habits of a culture, people assume that this is how things must be; they come to believe they have no other options.

Fortunately there are also many instances of cultures that, either by luck or by foresight, have succeeded in creating a context in which flow is relatively easy to achieve. For instance, the pygmies of the Ituri forest described by Colin Turnbull live in harmony with one another and their environment, filling their lives with useful and challenging activities. When they are not hunting or improving their villages they sing, dance, play musical instruments, or tell stories to each other. As in many so-called "primitive" cultures, every adult in this pygmy society

is expected to be a bit of an actor, singer, artist, and historian as well as a skilled worker. Their culture would not be given a high rating in terms of material achievement, but in terms of providing optimal experiences their way of life seems to be extremely successful.

Another good example of how a culture can build flow into its life-style is given by the Canadian ethnographer Richard Kool, describing one of the Indian tribes of British Columbia:

The Shushwap region was and is considered by the Indian people to be a rich place: rich in salmon and game, rich in below-ground food resources such as tubers and roots—a plentiful land. In this region, the people would live in permanent village sites and exploit the environs for needed resources. They had elaborate technologies for very effectively using the resources of the environment, and perceived their lives as being good and rich. Yet, the elders said, at times the world became too predictable and the challenge began to go out of life. Without challenge, life had no meaning.

So the elders, in their wisdom, would decide that the entire village should move, those moves occurring every 25 to 30 years. The entire population would move to a different part of the Shushwap land and there, they found challenge. There were new streams to figure out, new game trails to learn, new areas where the balsamroot would be plentiful. Now life would regain its meaning and be worth living. Everyone would feel rejuvenated and healthy. Incidentally, it also allowed exploited resources in one area to recover after years of harvesting. . . .

An interesting parallel is the Great Shrine at Isé, south of Kyoto, in Japan. The Isé Shrine was built about fifteen hundred years ago on one of a pair of adjacent fields. Every twenty years or so it has been taken down from the field it has been standing on, and rebuilt on the next one. By 1973 it had been reerected for the sixtieth time. (During the fourteenth century conflict between competing emperors temporarily interrupted the practice.)

The strategy adopted by the Shushwap and the monks of Isé resembles one that several statesmen have only dreamed about accomplishing. For example, both Thomas Jefferson and Chairman Mao Zedong believed that each generation needed to make its own revolution for its members to stay actively involved in the political system ruling their lives. In reality, few cultures have ever attained so good a fit between the psychological needs of their people and the options available for their lives. Most fall short, either by making survival too strenuous a task, or by closing themselves off into rigid patterns that stifle the

opportunities for action by each succeeding generation.

Cultures are defensive constructions against chaos, designed to reduce the impact of randomness on experience. They are adaptive responses, just as feathers are for birds and fur is for mammals. Cultures prescribe norms, evolve goals, build beliefs that help us tackle the challenges of existence. In so doing they must rule out many alternative goals and beliefs, and thereby limit possibilities; but this channeling of attention to a limited set of goals and means is what allows effortless action within self-created boundaries.

It is in this respect that games provide a compelling analogy to cultures. Both consist of more or less arbitrary goals and rules that allow people to become involved in a process and act with a minimum of doubts and distractions. The difference is mainly one of scale. Cultures are all-embracing: they specify how a person should be born, how she should grow up, marry, have children, and die. Games fill out the interludes of the cultural script. They enhance action and concentration during "free time," when cultural instructions offer little guidance, and a person's attention threatens to wander into the uncharted realms of chaos.

When a culture succeeds in evolving a set of goals and rules so compelling and so well matched to the skills of the population that its members are able to experience flow with unusual frequency and intensity, the analogy between games and cultures is even closer. In such a case we can say that the culture as a whole becomes a "great game." Some of the classical civilizations may have succeeded in reaching this state. Athenian citizens, Romans who shaped their actions by *virtus*, Chinese intellectuals, or Indian Brahmins moved through life with intricate grace, and derived perhaps the same enjoyment from the challenging harmony of their actions as they would have from an extended dance. The Athenian *polis*, Roman law, the divinely grounded bureaucracy of China, and the all-encompassing spiritual order of India were successful and lasting examples of how culture can enhance flow—at least for those who were lucky enough to be among the principal players.

A culture that enhances flow is not necessarily "good" in any moral sense. The rules of Sparta seem needlessly cruel from the vantage point of the twentieth century, even though they were by all accounts successful in motivating those who abided by them. The joy of battle and the butchery that exhilarated the Tartar hordes or the Turkish Janissaries were legendary. It is certainly true that for great segments of the European population, confused by the dislocating economic and cultural shocks of the 1920s, the Nazi-fascist regime and ideology provided

an attractive game plan. It set simple goals, clarified feedback, and allowed a renewed involvement with life that many found to be a relief from prior anxieties and frustrations.

Similarly, while flow is a powerful motivator, it does not guarantee virtue in those who experience it. Other things being equal, a culture that provides flow might be seen as "better" than one that does not. But when a group of people embraces goals and norms that will enhance its enjoyment of life there is always the possibility that this will happen at the expense of someone else. The flow of the Athenian citizen was made possible by the slaves who worked his property, just as the elegant life-style of the Southern plantations in America rested on the labor of imported slaves.

We are still very far from being able to measure with any accuracy how much optimal experience different cultures make possible. According to a large-scale Gallup survey taken in 1976, 40 percent of North Americans said that they were "very happy," as opposed to 20 percent of Europeans, 18 percent of Africans, and only 7 percent of Far Eastern respondents. On the other hand, another survey conducted only two years earlier indicated that the personal happiness rating of U.S. citizens was about the same as that of Cubans and Egyptians, whose per-capita GNPs were respectively five and over ten times less than that of the Americans. West Germans and Nigerians came out with identical happiness ratings, despite an over fifteenfold difference in per-capita GNP. So far, these discrepancies only demonstrate that our instruments for measuring optimal experience are still very primitive. Yet the fact that differences do exist seems incontestable.

Despite ambiguous findings, all large-scale surveys agree that citizens of nations that are more affluent, better educated, and ruled by more stable governments report higher levels of happiness and satisfaction with life. Great Britain, Australia, New Zealand, and the Netherlands appear to be the happiest countries, and the United States, despite high rates of divorce, alcoholism, crime, and addictions, is not very far behind. This should not be surprising, given the amount of time and resources we spend on activities whose main purpose is to provide enjoyment. Average American adults work only about thirty hours a week (and spend an additional ten hours doing things irrelevant to their jobs while at the workplace, such as daydreaming or chatting with fellow workers). They spend a slightly smaller amount of time—on the order of twenty hours per week—involved in leisure activities: seven hours actively watching television, three hours reading, two in more active

pursuits like jogging, making music, or bowling, and seven hours in social activities such as going to parties, seeing movies, or entertaining family and friends. The remaining fifty to sixty hours that an American is awake each week are spent in maintenance activities like eating, traveling to and from work, shopping, cooking, washing up, and fixing things; or in unstructured free time, like sitting alone and staring into space.

Although average Americans have plenty of free time, and ample access to leisure activities, they do not, as a result, experience flow often. Potentiality does not imply actuality, and quantity does not translate into quality. For example, TV watching, the single most often pursued leisure activity in the United States today, leads to the flow condition very rarely. In fact, working people achieve the flow experience—deep concentration, high and balanced challenges and skills, a sense of control and satisfaction—about four times as often on their jobs, proportionately, as they do when they are watching television.

One of the most ironic paradoxes of our time is this great availability of leisure that somehow fails to be translated into enjoyment. Compared to people living only a few generations ago, we have enormously greater opportunities to have a good time, yet there is no indication that we actually enjoy life more than our ancestors did. Opportunities alone, however, are not enough. We also need the skills to make use of them. And we need to know how to control consciousness—a skill that most people have not learned to cultivate. Surrounded by an astounding panoply of recreational gadgets and leisure choices, most of us go on being bored and vaguely frustrated.

This fact brings us to the second condition that affects whether an optimal experience will occur or not: an individual's ability to restructure consciousness so as to make flow possible. Some people enjoy themselves wherever they are, while others stay bored even when confronted with the most dazzling prospects. So in addition to considering the external conditions, or the structure of flow activities, we need also to take into account the internal conditions that make flow possible.

THE AUTOTELIC PERSONALITY

It is not easy to transform ordinary experience into flow, but almost everyone can improve his or her ability to do so. While the remainder of this book will continue to explore the phenomenon of optimal experience, which in turn should help the reader to become more familiar with

it, we shall now consider another issue: whether all people have the same potential to control consciousness; and if not, what distinguishes those who do it easily from those who don't.

Some individuals might be constitutionally incapable of experiencing flow. Psychiatrists describe schizophrenics as suffering from *anhedonia*, which literally means "lack of pleasure." This symptom appears to be related to "stimulus overinclusion," which refers to the fact that schizophrenics are condemned to notice irrelevant stimuli, to process information whether they like it or not. The schizophrenic's tragic inability to keep things in or out of consciousness is vividly described by some patients: "Things just happen to me now, and I have no control over them. I don't seem to have the same say in things anymore. At times I can't even control what I think about." Or: "Things are coming in too fast. I lose my grip of it and get lost. I am attending to everything at once and as a result I do not really attend to anything."

Unable to concentrate, attending indiscriminately to everything, patients who suffer from this disease not surprisingly end up unable to enjoy themselves. But what causes stimulus overinclusion in the first place?

Part of the answer probably has to do with innate genetic causes. Some people are just temperamentally less able to concentrate their psychic energy than others. Among schoolchildren, a great variety of learning disabilities have been reclassified under the heading of "attentional disorders," because what they have in common is lack of control over attention. Although attentional disorders are likely to depend on chemical imbalances, it is also very likely that the quality of childhood experience will either exacerbate or alleviate their course. From our point of view, what is important to realize is that attentional disorders not only interfere with learning, but effectively rule out the possibility of experiencing flow as well. When a person cannot control psychic energy, neither learning nor true enjoyment is possible.

A less drastic obstacle to experiencing flow is excessive self-consciousness. A person who is constantly worried about how others will perceive her, who is afraid of creating the wrong impression, or of doing something inappropriate, is also condemned to permanent exclusion from enjoyment. So are people who are excessively self-centered. A self-centered individual is usually not self-conscious, but instead evaluates every bit of information only in terms of how it relates to her desires. For such a person everything is valueless in itself. A flower is not worth a second look unless it can be used; a man or a woman who cannot advance one's interests does not deserve further attention. Con-

sciousness is structured entirely in terms of its own ends, and nothing is allowed to exist in it that does not conform to those ends.

Although a self-conscious person is in many respects different from a self-centered one, neither is in enough control of psychic energy to enter easily into a flow experience. Both lack the attentional fluidity needed to relate to activities for their own sake; too much psychic energy is wrapped up in the self, and free attention is rigidly guided by its needs. Under these conditions it is difficult to become interested in intrinsic goals, to lose oneself in an activity that offers no rewards outside the interaction itself.

Attentional disorders and stimulus overinclusion prevent flow because psychic energy is too fluid and erratic. Excessive self-consciousness and self-centeredness prevent it for the opposite reason: attention is too rigid and tight. Neither extreme allows a person to control attention. Those who operate at these extremes cannot enjoy themselves, have a difficult time learning, and forfeit opportunities for the growth of the self. Paradoxically, a self-centered self cannot become more complex, because all the psychic energy at its disposal is invested in fulfilling its current goals, instead of learning about new ones.

The impediments to flow considered thus far are located within the individual himself. But there are also many powerful environmental obstacles to enjoyment. Some of these are natural, some social in origin. For instance, one would expect that people living in the incredibly harsh conditions of the arctic regions, or in the Kalahari desert, would have little opportunity to enjoy their lives. Yet even the most severe natural conditions cannot entirely eliminate flow. The Eskimos in their bleak, inhospitable lands learned to sing, dance, joke, carve beautiful objects, and create an elaborate mythology to give order and sense to their experiences. Possibly the snow dwellers and the sand dwellers who couldn't build enjoyment into their lives eventually gave up and died out. But the fact that some survived shows that nature alone cannot prevent flow from happening.

The social conditions that inhibit flow might be more difficult to overcome. One of the consequences of slavery, oppression, exploitation, and the destruction of cultural values is the elimination of enjoyment. When the now extinct natives of the Caribbean islands were put to work in the plantations of the conquering Spaniards, their lives became so painful and meaningless that they lost interest in survival, and eventually ceased reproducing. It is probable that many cultures disappeared in a similar fashion, because they were no longer able to provide the experience of enjoyment.

Two terms describing states of social pathology apply also to conditions that make flow difficult to experience: *anomie* and *alienation*. Anomie—literally, “lack of rules”—is the name the French sociologist Emile Durkheim gave to a condition in society in which the norms of behavior had become muddled. When it is no longer clear what is permitted and what is not, when it is uncertain what public opinion values, behavior becomes erratic and meaningless. People who depend on the rules of society to give order to their consciousness become anxious. Anomic situations might arise when the economy collapses, or when one culture is destroyed by another, but they can also come about when prosperity increases rapidly, and old values of thrift and hard work are no longer as relevant as they had been.

Alienation is in many ways the opposite: it is a condition in which people are constrained by the social system to act in ways that go against their goals. A worker who in order to feed himself and his family must perform the same meaningless task hundreds of times on an assembly line is likely to be alienated. In socialist countries one of the most irritating sources of alienation is the necessity to spend much of one's free time waiting in line for food, for clothing, for entertainment, or for endless bureaucratic clearances. When a society suffers from anomie, flow is made difficult because it is not clear what is worth investing psychic energy in; when it suffers from alienation the problem is that one cannot invest psychic energy in what is clearly desirable.

It is interesting to note that these two societal obstacles to flow, anomie and alienation, are functionally equivalent to the two personal pathologies, attentional disorders and self-centeredness. At both levels, the individual and the collective, what prevents flow from occurring is either the fragmentation of attentional processes (as in anomie and attentional disorders), or their excessive rigidity (as in alienation and self-centeredness). At the individual level anomie corresponds to anxiety, while alienation corresponds to boredom.

Neurophysiology and Flow

Just as some people are born with better muscular coordination, it is possible that there are individuals with a genetic advantage in controlling consciousness. Such people might be less prone to suffer from attentional disorders, and they may experience flow more easily.

Dr. Jean Hamilton's research with visual perception and cortical activation patterns lends support to such a claim. One set of her evidence is based on a test in which subjects had to look at an ambiguous figure (a Necker cube, or an Escher-type illustration that at one point

seems to be coming out of the plane of the paper toward the viewer and the next moment seems to recede behind the plane), and then perceptually “reverse” it—that is, see the figure that juts out of the surface as if it were sinking back, and vice versa. Dr. Hamilton found that students who reported less intrinsic motivation in daily life needed on the average to fix their eyes on more points before they could reverse the ambiguous figure, whereas students who on the whole found their lives more intrinsically rewarding needed to look at fewer points, or even only a single point, to reverse the same figure.

These findings suggest that people might vary in the number of external cues they need to accomplish the same mental task. Individuals who require a great deal of outside information to form representations of reality in consciousness may become more dependent on the external environment for using their minds. They would have less control over their thoughts, which in turn would make it more difficult for them to enjoy experience. By contrast, people who need only a few external cues to represent events in consciousness are more autonomous from the environment. They have a more flexible attention that allows them to restructure experience more easily, and therefore to achieve optimal experiences more frequently.

In another set of experiments, students who did and who did not report frequent flow experiences were asked to pay attention to flashes of lights or to tones in a laboratory. While the subjects were involved in this attentional task, their cortical activation in response to the stimuli was measured, and averaged separately for the visual and auditory conditions. (These are called “evoked potentials.”) Dr. Hamilton's findings showed that subjects who reported only rarely experiencing flow behaved as expected: when responding to the flashing stimuli their activation went up significantly above their baseline level. But the results from subjects who reported flow frequently were very surprising: activation decreased when they were concentrating. Instead of requiring more effort, investment of attention actually seemed to decrease mental effort. A separate behavioral measure of attention confirmed that this group was also more accurate in a sustained attentional task.

The most likely explanation for this unusual finding seems to be that the group reporting more flow was able to reduce mental activity in every information channel but the one involved in concentrating on the flashing stimuli. This in turn suggests that people who can enjoy themselves in a variety of situations have the ability to screen out stimulation and to focus only on what they decide is relevant for the moment. While paying attention ordinarily involves an additional bur-

den of information processing above the usual baseline effort, for people who have learned to control consciousness focusing attention is relatively effortless, because they can shut off all mental processes but the relevant ones. It is this flexibility of attention, which contrasts so sharply with the helpless overinclusion of the schizophrenic, that may provide the neurological basis for the autotelic personality.

The neurological evidence does not, however, prove that some individuals have inherited a genetic advantage in controlling attention and therefore experiencing flow. The findings could be explained in terms of learning rather than inheritance. The association between the ability to concentrate and flow is clear; it will take further research to ascertain which one causes the other.

The Effects of the Family on the Autotelic Personality

A neurological advantage in processing information may not be the only key to explaining why some people have a good time waiting at a bus station while others are bored no matter how entertaining their environment is. Early childhood influences are also very likely factors in determining whether a person will or will not easily experience flow.

There is ample evidence to suggest that how parents interact with a child will have a lasting effect on the kind of person that child grows up to be. In one of our studies conducted at the University of Chicago, for example, Kevin Rathunde observed that teenagers who had certain types of relationship with their parents were significantly more happy, satisfied, and strong in most life situations than their peers who did not have such a relationship. The family context promoting optimal experience could be described as having five characteristics. The first one is *clarity*: the teenagers feel that they know what their parents expect from them—goals and feedback in the family interaction are unambiguous. The second is *centering*, or the children's perception that their parents are interested in what they are doing in the present, in their concrete feelings and experiences, rather than being preoccupied with whether they will be getting into a good college or obtaining a well-paying job. Next is the issue of *choice*: children feel that they have a variety of possibilities from which to choose, including that of breaking parental rules—as long as they are prepared to face the consequences. The fourth differentiating characteristic is *commitment*, or the trust that allows the child to feel comfortable enough to set aside the shield of his defenses, and become unselfconsciously involved in whatever he is interested in.

And finally there is *challenge*, or the parents' dedication to provide increasingly complex opportunities for action to their children.

The presence of these five conditions made possible what was called the "autotelic family context," because they provide an ideal training for enjoying life. The five characteristics clearly parallel the dimensions of the flow experience. Children who grow up in family situations that facilitate clarity of goals, feedback, feeling of control, concentration on the task at hand, intrinsic motivation, and challenge will generally have a better chance to order their lives so as to make flow possible.

Moreover, families that provide an autotelic context conserve a great deal of psychic energy for their individual members, thus making it possible to increase enjoyment all around. Children who know what they can and cannot do, who do not have to constantly argue about rules and controls, who are not worried about their parents' expectations for future success always hanging over their heads, are released from many of the attentional demands that more chaotic households generate. They are free to develop interests in activities that will expand their selves. In less well-ordered families a great deal of energy is expended in constant negotiations and strife, and in the children's attempts to protect their fragile selves from being overwhelmed by other people's goals.

Not surprisingly, the differences between teenagers whose families provided an autotelic context and those whose families did not were strongest when the children were at home with the family: here those from an autotelic context were much more happy, strong, cheerful, and satisfied than their less fortunate peers. But the differences were also present when the teenagers were alone studying, or in school: here, too, optimal experience was more accessible to children from autotelic families. Only when teenagers were with their friends did the differences disappear: with friends both groups felt equally positive, regardless of whether the families were autotelic or not.

It is likely that there are ways that parents behave with babies much earlier in life that will also predispose them to find enjoyment either with ease or with difficulty. On this issue, however, there are no long-term studies that trace the cause-and-effect relationships over time. It stands to reason, however, that a child who has been abused, or who has been often threatened with the withdrawal of parental love—and unfortunately we are becoming increasingly aware of what a disturbing proportion of children in our culture are so mistreated—will be so

worried about keeping his sense of self from coming apart as to have little energy left to pursue intrinsic rewards. Instead of seeking the complexity of enjoyment, an ill-treated child is likely to grow up into an adult who will be satisfied to obtain as much pleasure as possible from life.

THE PEOPLE OF FLOW

The traits that mark an autotelic personality are most clearly revealed by people who seem to enjoy situations that ordinary persons would find unbearable. Lost in Antarctica or confined to a prison cell, some individuals succeed in transforming their harrowing conditions into a manageable and even enjoyable struggle, whereas most others would succumb to the ordeal. Richard Logan, who has studied the accounts of many people in difficult situations, concludes that they survived by finding ways to turn the bleak objective conditions into subjectively controllable experience. They followed the blueprint of flow activities. First, they paid close attention to the most minute details of their environment, discovering in it hidden opportunities for action that matched what little they were capable of doing, given the circumstances. Then they set goals appropriate to their precarious situation, and closely monitored progress through the feedback they received. Whenever they reached their goal, they upped the ante, setting increasingly complex challenges for themselves.

Christopher Burney, a prisoner of the Nazis who had spent a long time in solitary confinement during World War II, gives a fairly typical example of this process:

If the reach of experience is suddenly confined, and we are left with only a little food for thought or feeling, we are apt to take the few objects that offer themselves and ask a whole catalogue of often absurd questions about them. Does it work? How? Who made it and of what? And, in parallel, when and where did I last see something like it and what else does it remind me of? . . . So we set in *tram a wonderful flow of combinations and associations in our minds*, the length and complexity of which soon obscures its humble starting-point. . . . My bed, for example, could be measured and roughly classified with school beds or army beds. . . . When I had done with the bed, which was too simple to intrigue me long, I felt the blankets, estimated their warmth, examined the precise mechanics of the window, the discomfort of the toilet . . . computed the length and breadth, the orientation and elevation of the cell *italics added*.

Essentially the same ingenuity in finding opportunities for mental action and setting goals is reported by survivors of any solitary confinement, from diplomats captured by terrorists, to elderly ladies imprisoned by Chinese communists. Eva Zeisel, the ceramic designer who was imprisoned in Moscow's Lubyanka prison for over a year by Stalin's police, kept her sanity by figuring out how she would make a bra out of materials at hand, playing chess against herself in her head, holding imaginary conversations in French, doing gymnastics, and memorizing poems she composed. Alexander Solzhenitsyn describes how one of his fellow prisoners in the Lefortovo jail mapped the world on the floor of the cell, and then imagined himself traveling across Asia and Europe to America, covering a few kilometers each day. The same "game" was independently discovered by many prisoners; for instance Albert Speer, Hitler's favorite architect, sustained himself in Spandau prison for months by pretending he was taking a walking trip from Berlin to Jerusalem, in which his imagination provided all the events and sights along the way.

An acquaintance who worked in United States Air Force intelligence tells the story of a pilot who was imprisoned in North Vietnam for many years, and lost eighty pounds and much of his health in a jungle camp. When he was released, one of the first things he asked for was to play a game of golf. To the great astonishment of his fellow officers he played a superb game, despite his emaciated condition. To their inquiries he replied that every day of his imprisonment he imagined himself playing eighteen holes, carefully choosing his clubs and ap- proach and systematically varying the course. This discipline not only helped preserve his sanity, but apparently also kept his physical skills well honed.

Tollas Tibor, a poet who spent several years in solitary confinement during the most repressive phases of the Hungarian communist regime, says that in the Visegrád jail, where hundreds of intellectuals were imprisoned, the inmates kept themselves occupied for more than a year by devising a poetry translation contest. First, they had to decide on the poem to translate. It took months to pass the nominations around from cell to cell, and several more months of ingenious secret messages before the votes were tallied. Finally it was agreed that Walt Whitman's *O Captain! My Captain!* was to be the poem to translate into Hungarian, partly because it was the one that most of the prisoners could recall from memory in the original English. Now began the serious work: everyone sat down to make his own version of the poem. Since no paper or writing tool was available, Tollas spread a film of soap on

the soles of his shoe, and carved the letters into it with a toothpick. When a line was learned by heart, he covered his shoe with a new coating of soap. As the various stanzas were written, they were memorized by the translator and passed on to the next cell. After a while, a dozen versions of the poem were circulating in the jail, and each was evaluated and voted on by all the inmates. After the Whitman translation was adjudicated, the prisoners went on to tackle a poem by Schiller.

When adversity threatens to paralyze us, we need to reassert control by finding a new direction in which to invest psychic energy, a direction that lies outside the reach of external forces. When every aspiration is frustrated, a person still must seek a meaningful goal around which to organize the self. Then, even though that person is objectively a slave, subjectively he is free. Solzhenitsyn describes very well how even the most degrading situation can be transformed into a flow experience: "Sometimes, when standing in a column of dejected prisoners, amidst the shouts of guards with machine guns, I felt such a rush of rhymes and images that I seemed to be wafted overhead. . . . At such moments I was both free and happy. . . . Some prisoners tried to escape by smashing through the barbed wire. For me there was no barbed wire. The head count of prisoners remained unchanged but I was actually away on a distant flight."

Not only prisoners report these strategies for wresting control back to their own consciousness. Explorers like Admiral Byrd, who once spent four cold and dark months by himself in a tiny hut near the South Pole, or Charles Lindbergh, facing hostile elements alone on his transatlantic flight, resorted to the same steps to keep the integrity of their selves. But what makes some people able to achieve this internal control, while most others are swept away by external hardships?

Richard Logan proposes an answer based on the writings of many survivors, including those of Viktor Frankl and Bruno Bettelheim, who have reflected on the sources of strength under extreme adversity. He concludes that the most important trait of survivors is a "nonself-conscious individualism," or a strongly directed purpose that is not self-seeking. People who have that quality are bent on doing their best in all circumstances, yet they are not concerned primarily with advancing their own interests. Because they are intrinsically motivated in their actions, they are not easily disturbed by external threats. With enough psychic energy free to observe and analyze their surroundings objectively, they have a better chance of discovering in them new opportunities for action. If we were to consider one trait a key element of the autotelic personality, this might be it. Narcissistic individuals, who are

mainly concerned with protecting their self, fall apart when the external conditions turn threatening. The ensuing panic prevents them from doing what they must do; their attention turns inward in an effort to restore order in consciousness, and not enough remains to negotiate outside reality.

Without interest in the world, a desire to be actively related to it, a person becomes isolated into himself. Bertrand Russell, one of the greatest philosophers of our century, described how he achieved personal happiness: "Gradually I learned to be indifferent to myself and my deficiencies; I came to center my attention increasingly upon external objects: the state of the world, various branches of knowledge, individuals for whom I felt affection." There could be no better short description of how to build for oneself an autotelic personality.

In part such a personality is a gift of biological inheritance and early upbringing. Some people are born with a more focused and flexible neurological endowment, or are fortunate to have had parents who promoted unselfconscious individuality. But it is an ability open to cultivation, a skill one can perfect through training and discipline. It is now time to explore further the ways this can be done.