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THE CONSTRUCTION OF MEANING THROUGH VITAL ENGAGEMENT

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Some people go through life as if dragged against their will: Nothing in the world is interesting, nothing they do is meaningful. Other individuals relish almost every moment of their lives and find it permeated with meaning. What accounts for the difference? In this chapter we suggest that one important way people find meaning in their lives is by becoming deeply involved in activities that afford them scope. Even apparently trivial activities become meaningful over time if done with care and concentration. And many cultural domains—such as the arts, literature, and scientific research—allow persons to build meaningful lives by providing almost unlimited opportunities for engagement.

Finding meaning and enjoyment in one's relationship with the world constitutes the notion of flourishing explored in this chapter (cf. Csikszentmihalyi & Rathunde, 1998; Emmons, 1999). Elsewhere, we have described participation in an enduring relationship that is at once enjoyed and meaningful as *vital engagement* (Nakamura, 1995, 1996). We will examine this optimal developmental outcome in a context that places it in bold relief: the creative work of scientists and artists. Although we will focus on long-term creators and their relationship to science or art, a person can be vitally engaged in any relationship with the world, one of work or love, play or service, no matter how humble.

We develop the concept of vital engagement in two stages. The lion's share of the chapter will be devoted to the phenomenon of enjoyable interaction with the environment—in particular, the body of theory and research on the flow state. The next section will focus on how people achieve meaningful relationships with the environment. Rather than review

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the growing literature on meaning and on the meaning of life (see chapter 5, this volume), we specifically consider how an enjoyed relationship acquires meaning. First, however, we present the perspective from which we approach vital engagement and describe the phenomenon in more detail.

EXPERIENCE AND VITAL ENGAGEMENT

The fullness of a person's participation in the world has been granted central importance in human development by some psychologists through the years (e.g., Allport, 1937; Buhler & Massarik, 1968). Recently, this view of positive functioning has been extended to the end of the life course by the MacArthur Study on Aging in America. Whereas growing old was associated with social disengagement by early researchers (Cumming & Henry, 1961), continued active engagement with life emerged as a key aspect of successful aging in the MacArthur Study (Rowe & Kahn, 1998). We share Rowe and Kahn's focus on the person's connection to the world, though we think of vital engagement as a general way of being related to the world, possible in innumerable activities, whereas they focus on "love and work"; and we train our attention on the quality of the experienced relationship whereas their scope is broader, addressing the sheer number of older people's social ties and the sheer fact of continued productivity.

Indeed, what most distinguishes the notion of vital engagement from related concepts in the study of lives is attention to the experiential. We focus on the relationship between a person and the environment (*experience* in the sense of Dewey, 1958, 1963) and on the subjective phenomenology of this transaction (*subjective experience* in Csikszentmihalyi's [1975/2000] sense; see also Inghilleri, 1999). The pragmatist tradition within philosophical psychology is the clearest predecessor of the perspective taken, including the view of optimal functioning and the more general model of experience, attentional processes, and the self (Dewey, 1913, 1958, 1963; James, 1890/1981; Mead, 1934).

From this perspective, people are capable of actively forming goals, investing their attention selectively, and constructing the meaning of their experience. As noted elsewhere (Csikszentmihalyi & Rathunde, 1998), others have developed this notion of people as active shapers as well as products of their own experience (for an influential treatment, see Lerner & Busch-Rossnagel, 1981; for a recent summary, see Brandstadter, 1998). At the same time, humans are socioculturally and historically situated actors whose experience is constituted jointly by environment and person. A person's goals influence transactions with the environment—but only through transactions

with the environment will a self be realized. This interactionism (cf. Magnusson & Stattin, 1998) is counterposed to mechanistic psychologies that depict passive actors moved by forces outside their control but also to those humanistic and other psychologies that imply the possibility of subjective experience and initiative unshaped by culture or history.

The sociocultural system supplies the taken-for-granted structures of people's experience (Berger & Luckmann, 1966). As consciously encountered by an individual, it is in addition both (a) a source of demands and constraints on the pursuit of needs and desires; and, on the other hand, (b) a source of resources, action opportunities, and affordances (Brandstadter, 1998). The former is a long-standing focus of psychologists, who have studied accommodation, defense, and resistance to externally imposed demands and constraints. This chapter addresses the latter, less studied role of sociocultural systems (in this case, art and science) as spheres that provide media for positive experience and self-realization. The arts and sciences encompass both a cultural domain—or body of knowledge, practices, and tools—and an associated social field—or community of practice (Csikszentmihalyi, 1996). We will consider how creative artists and scientists exploit the opportunities for vital engagement that these spheres afford.

In the course of daily life, people encounter a vast amount of information. Information appears in consciousness through the selective investment of attention. People's *subjective experience*, the content of consciousness from moment to moment, is thus determined by their decisions about the allocation of limited attention. As William James observed years ago, with perhaps a touch of exaggeration: "My *experience is what I agree to attend to*. Only those items which I *notice* shape my mind" (cited in Csikszentmihalyi, 1978, p. 339). The attention of highly successful scientists, for example, is drawn constantly to their work; the eminent chemist Linus Pauling liked to say, "I don't think that I'm smarter than a lot of other people working in science, but perhaps I think more about the problems" (Creativity in Later Life Project, 1990a, p. 16). Attention may be divided or undivided (Csikszentmihalyi, Rathunde, & Whalen, 1993; Dewey, 1913); indifferent or caring (Dewey, 1958). The quality of the attention paid to the world affects the nature of people's interactions and the quality of their subjective experience. Pauling gave his attention to scientific problems enthusiastically; his work "was not compulsive or burdensome, but engrossing and enjoyable" (Goertzel & Goertzel, 1995, p. 82).

Information, the medium of exchange between person and environment, is also the material out of which the self is formed. The self emerges when consciousness becomes aware of itself as information about the body, subjective states, and the personal past and future. Mead (1934) distinguished between two aspects of the self. The sum of one's conscious processes make

up the "I," or knower; the "me," or the known, is defined by the information about oneself that enters awareness when attention is turned on oneself. The distinction is helpful in conceptualizing vital engagement.

Vital Engagement

The concept of vital engagement is meant to capture a certain way of being related to the world—one of engagement or felt connection to the object or other that is experienced as vital in two senses. These are the relationship's felt significance or meaningfulness to the self (Mead's *me*) and the vitality experienced when interaction with the object is going well for the individual (Mead's *I*). A polar opposite relationally is alienation, which implies an active separation or estrangement between self and object rather than connection and belonging.

A single life yields instances of both engagement and alienation. One social scientist who had been deeply engaged in his work for many decades recalled quickly becoming "very interested and involved" in it. He also recalled his estrangement in an earlier line of work that had thwarted his desire to do something that would "live beyond" him and be absorbing:

> I decided I would have to stop being a chemist, because of the fact that I wanted something that after five o'clock I would continue to think about. And that I just *wouldn't stop* thinking about. But with chemistry, it didn't—it was not that intrinsically involving. (Creativity in Later Life Project, 1990b, p. 4)

The concept of vital engagement is informed by the work of John Dewey (1913, 1958, 1963), in particular his conceptions of interest and artistic–aesthetic experience. Dewey's (1958) model for optimal functioning was artistic–aesthetic experience: transactions between person and environment that fully absorb the individual. He maintained that any experience—repairing a car, gardening, cooking—has artistic–aesthetic quality if characterized by "active and alert commerce with the world; at its height [this] signifies complete interpenetration of self and the world of objects and events" (p. 19). Turning to the notion of shaping experience through the selective investment of attention, interest relates the person to a particular sphere. In it, the self becomes "engaged, engrossed, or entirely taken up with some activity because of its recognized worth" (Dewey, 1913, p. 17).

In vital engagement, the relationship to the world is characterized by completeness of involvement or participation and marked by intensity. There is a strong felt connection between self and object; a writer is "swept away" by a project, a scientist is "mesmerized by the stars." The relationship has subjective meaning; work is a "calling." The object—whether it is a cultural domain like poetry or a person, group, institution, political cause,

or something else—is experienced as significant and worthy of attention. Likewise, it is valued aspects of the self that are absorbed or invested in the relationship and realized or expressed through it—a poet's gift, a scientist's iconoclasm, a journalist's belief in democracy.

The relationship to the world provides experiential rewards in the here and now; it is distinguished by experiences of enjoyment and absorption. Attention is experienced as willingly invested rather than coerced. At the same time, the relationship is characterized by duration—that is, the cathexis of attention and energy has endured over a period of time rather than being a transient state. We will define *vital engagement* in this chapter as a relationship to the world that is characterized both by experiences of flow (enjoyed absorption) and by meaning (subjective significance). Illustrations will be drawn from interviews conducted with artists and scientists who are still actively working late in life. Subjective, life-historical recollections have recognized limitations as data about the way that experience unfolds. We accept these limitations in the service of initiating discussion of these phenomena but advocate future research using complementary data.

Interest

In developmental psychology, the study of early interest as it relates to learning and development (Oppenheimer & Valsiner, 1991; Renninger, Hidi, & Krapp, 1992) has generated a relational concept closely akin to the notion of vital engagement. Influenced in part by Dewey, several contemporary researchers define interest as a long-term, historied relationship between a person and an object of interest (Krapp & Fink, 1992; Prenzel, 1992). The specificity of object differentiates the interest relationship from general dispositions, such as intrinsic motivational orientation (Schiefele, 1992). The concept is interactionist, locating interest in the relationship *between* the person and object (Rathunde, 1995). In contrast, two other constructs—the notions of trait interest (e.g., vocational preferences) and interestingness (i.e., the predictably engaging object)—emphasize either the person *or* the object (Krapp, Hidi, & Renninger, 1992; Prenzel, 1992). Prenzel (1992) identified the following characteristics of interest relationships: (a) relevant skills and the internal representation of the object are complex, (b) positive emotions attach to the object and to interaction with it, (c) person–object interaction is intrinsically motivated, and (d) the object is valued.

The concept of interest as defined by some contemporary interest researchers is thus closely related to the notion of vital engagement, in focusing on the relationship between the person and object, presuming duration and intrinsic motivation, and stressing value or importance as well as enjoyment. On the other hand, even these researchers describe the *object*

as valued while giving less attention to the notion that valued aspects of the *self* find realization within the relationship. Much of the latter attention has focused on learning, or the individual's development of domain knowledge. Relatedly, the notion of interest is heavily associated with a particular subset of activities (e.g., hobbies, intellectual pursuits), whereas we wish to denote intense relationship to any focus of attention, from work in a calling, to human relationships, to civic or political engagement. Finally, although some interest researchers, drawing on Mead and Vygotsky, recognize the culturally and socially constructed nature of the interest objects that they study, these objects nevertheless have tended to be conceptualized ahistorically; the object's own processes of change have received relatively little attention. In the arts and sciences, in contrast, historical changes in the fertility of a domain, paradigm shifts, and fluctuations in a domain's impact on the wider society all prominently influence creators' vital engagement over the life course.

The differences noted may have their roots in the interest literature's focus on childhood and on the formation of interest. Most contemporary interest researchers share a concern with educational settings; they focus on the first decades of life and the role of others early in the learning process. In childhood, interests are less reflectively based on values (Krapp & Fink, 1992), tied to remote ends (Fink, 1991), or invested with elaborated meanings. Whereas it is manifest that the adult creator's relationship to art or science is critically shaped by conditions and changes in the domain, this is less true of children's interests. Balancing the focus of the contemporary interest literature, the examples in this chapter are drawn from the lives of artists and scientists in the second half of life (cf. Rathunde, 1995).

FLOW: THE SUBJECTIVE EXPERIENCE OF FULL INVOLVEMENT

We turn next to the nature of the enjoyment that characterizes vital engagement. Although in everyday usage *enjoyment* may connote pleasure or contentment, when Csikszentmihalyi and his colleagues (1975/2000) studied people engaged in enjoyable interaction with the environment—activities engaged in for their experiential rewards—they found that the subjective experience of enjoyment is one of full involvement. Subsequent work (Csikszentmihalyi, 1990, 1997; Csikszentmihalyi & Csikszentmihalyi, 1988) has explored further the nature and conditions of the subjective experience of joyful involvement.

When one is completely absorbed in interaction with the world, experience unfolds organically and it is possible to enter a state of flow (Csikszentmihalyi, 1975/2000). The flow state has the following characteristics: intense and focused concentration on the here and now; a loss of self-

consciousness as action and awareness merge; a sense that one will be able to handle the situation because one knows how to respond to whatever will happen next; a sense that time has passed more quickly or slowly than normal; and an experience of the activity as rewarding in and of itself, regardless of the outcome.

Parameters of experience that foster the flow state have been identified: clarity about one's immediate goals, throughout the interaction; continuous and unambiguous feedback about the progress that one is making as the activity unfolds; and finally, perceived opportunities for action that stretch one's existing capacities. In flow, people thus feel that their capacities are being fully used (de Charms, 1968; Deci, 1975; White, 1959). Entering flow depends on establishing a balance between perceived capacities and perceived challenges; remaining in flow depends on maintaining this balance (Berlyne, 1960; Hunt, 1965). If one begins to feel that the challenges of the situation exceed one's skills, the focus of attention in the here and now gets disrupted; one becomes worried, then anxious. If one begins to feel that one's skills exceed the opportunities for action offered by the situation, attention drifts; one first relaxes and then grows bored. The shift toward an aversive experiential state constitutes information about one's relationship to the environment, offering a cue to adjust one's level of skill or challenge.

One sphere in which flow has been described is creative work in the arts and sciences (Csikszentmihalyi, 1996). An extended account from one of the creators interviewed in the Creativity in Later Life study makes the nature of the flow state in vital engagement more concrete. For long-term artists and scientists, a central component of the life structure is their relationship to the cultural domain that they find absorbing. They describe not isolated flow experiences, but a *flow activity*[1] (Csikszentmihalyi, 1975/2000, 1990) with which they have become heavily identified and to which they have sustained a long commitment.

Mark Strand, a Pulitzer prize recipient and former poet laureate of the United States, has suggested that he writes poetry because "it amuses me, and I seem focused when I'm writing"; in other words, the activity holds experiential rewards. In his account of the phenomenology of the writing process when he is feeling "focused," some of the details are particular to the domain of literature, but the contours of his subjective experience are easily recognized as those of the flow state. He has described the intense concentration on the immediate interaction, the loss of temporal awareness and self-consciousness, and the merging of action and awareness that he experiences. Fully engaged with the emerging poem and immersed in the

[1] An activity whose structural characteristics (e.g., clear goals, immediate feedback, a complex system of challenges) make flow experiences likely.

medium of language, he must permit the process of meaning making to unfold moment by moment if he is to stay in flow, rather than allowing excited anticipation of the end-product to pull his attention out of the present. When the poet is "completely absorbed in a poem," he experiences a sense of control over the creative process:

> You're right in the work, you lose your sense of time, you're completely enraptured, you're completely caught up in what you're doing . . . it's not that you're swayed by the possibilities you see in this work, although that's a little of it; if that becomes too powerful then you get up, because the excitement is too great. You can't continue to work, or continue to see the end of the work, because you're jumping ahead of yourself all the time. The idea is to be so—so saturated with it that there's no future or past, it's just an extended present in which you're making meaning. And dismantling meaning, and remaking it. . . . With undue regard for the words you're using. It's meaning carried to a high order. It's not just essential communication, daily communication; it's a total communication. . . . When you're working on something and you're working well, you have the feeling that there's no other way of saying what you're saying. (Creativity in Later Life Project, 1991, p. 5)

Vitally engaged scientists similarly indicate that they become completely caught up in their work when it is going well, and enjoy the process of discovery or the unraveling of a challenging problem. Physicist Victor Weisskopf (1991) captured the subjective experience, calling the pleasure of doing research the "joy of insight."

Flow in Work and Love, Play and Duty

A given individual can find flow in virtually any interaction, even the most trivial, depending on the skills that are brought to it and the challenges that can be identified in it (Csikszentmihalyi, 1996). To date, the largest body of flow research has focused on what can broadly be characterized as forms of play. Though other considerations like health and fitness and fame and fortune might motivate participation in "play" pursuits, a key motive is just the sheer enjoyment of the activity. In a series of studies, flow has been reported by people at play, including rock climbers, chess players, basketball players, social dancers (Csikszentmihalyi, 1975/2000), and elite athletes across diverse sports (Jackson, 1992, 1995).

Another set of studies has explored the experience of flow in artistic activities; for example, in the performance of music (Csikszentmihalyi & Rich, 1997; Elliott, 1995), in viewing works of visual art (Csikszentmihalyi & Robinson, 1990), or when writing poetry and fiction (Perry, 1999). Involvement in religious practices has been studied from the perspective of flow with reference to rituals (Turner, 1974) and Confucianism (Eno, 1990).

The role of flow in the evolution of world religions has also been analyzed (Inghilleri, 1999; Massimini & Delle Fave, 1991).

Flow occurs in social interactions, though research on this topic is more limited. It occurs, in particular, within exchanges such as business transactions (Lipman-Blumen, 1999) and the coordinated activity of team sports (Jackson & Csikszentmihalyi, 1999). In unstructured social situations, participants' positive affect is not usually accompanied by intense concentration; nevertheless, flow can occur in informal interaction and in conversation (Csikszentmihalyi, 1990, 1996; Csikszentmihalyi & Larson, 1984). Enjoyed absorption is clearly experienced in activists' sustained pursuit of social change (Colby & Damon, 1992), however grueling that work may be. Finally, in paid work, the conditions for entering flow very often are present—even though, for many people, enjoyment is undermined by powerful negative stereotypes about work (Csikszentmihalyi, 1996; LeFevre, 1988).

The key finding is that the phenomenology of enjoyment is the same across all the different kinds of activity that for some people at some times prove deeply involving. The intense absorption feels the same, whether found in work or play, love or duty.

Measuring Flow

Given the importance of flow to the quality of life—and also to development, as will be discussed shortly—the question of measurement becomes central. It is an inherently challenging task because attending to one's subjective state to describe it disrupts the merging of action and attention that characterizes being in flow. Researchers have used a variety of measures to identify, characterize, and quantify the subjective experience of flow in daily life. These measures include (a) qualitative interviews that probe the nature and conditions of the flow experience, (b) paper-and-pencil measures that address the frequency of flow or its component dimensions in people's lives, and (c) real-life, real-time measures of the nature and everyday contexts of flow experience that use the Experience Sampling Method or ESM (Csikszentmihalyi & Larson, 1987). In ESM studies, participants carry a paging device. When signaled, they record their activities, thoughts, and subjective states at the time. ESM research is more resource-intensive than other approaches to the study of flow. Nevertheless, data about the daily experience of families, adolescents, and working parents, including longitudinal data, have been collected.

Large-scale data collection concerning the frequency of flow is a possibility as a component in evaluation of the population's optimal psychological functioning. Recently, the U.S. Bureau of the Census has shown interest in using the ESM to gather data about Americans' subjective experience, including flow, on a large scale. Already, at the other end of the spectrum

in terms of measures, a single item has been included on a Gallup poll (D. Clinton, personal communication, 1998) and on a German national survey (Noelle-Neumann, 1995) to gauge the frequency of flow experiences in a broad cross-section of each population. Both polls asked how often the respondents experience involvement so intense that they lose track of time. The results of the two polls were similar. Although about one fifth of those surveyed (16% of Americans, 23% of Germans) reported having the experience described on a daily basis, more than one third in each poll indicated that they rarely or never experience involvement so intense that they lose track of time (42% of Americans, 35% of Germans). The proportions of people reporting that they do not experience flow raise questions about intervention. Several successful interventions informed by the flow model have been undertaken (Inghilleri, 1999; Massimini & Delle Fave, 2000). It bears noting that these interventions have focused on identifying and cultivating interests and activities that provide enjoyment rather than directly targeting the quality of experience itself.

Flow, Emergent Motivation, and Development

As already described, when one is in flow, the quality of subjective experience influences what one seeks to do next. Subjective states provide feedback about the changing relationship to the environment. Anxiety and boredom are attended to as negative feedback and flow as positive feedback; one continuously adjusts the ongoing relationship with the environment to find the optimal balance point between one's capacities for action and the perceived opportunities for action. What happens at any given moment is responsive to what happened the moment before within the relationship, rather than being dictated by some drive ascribed to the person or some directive ascribed to the environment. In a flow activity, motivation is emergent in the sense that proximal goals arise out of the interaction between person and object (Csikszentmihalyi, 1985; Csikszentmihalyi & Nakamura, 1999).

Because the subjective state is intrinsically rewarding, people seek to reproduce flow experiences. As they master challenges in an activity, however, they develop greater levels of skill, and the activity ceases to be as involving as before; they must identify increasingly complex challenges if they are to continue experiencing flow. Experiential goals thus introduce a principle of selection into psychological functioning that fosters growth. The optimal level of challenge stretches a person's existing capacities (e.g., Vygotsky, 1978); staying in flow results in a more complex set of skills. Because the dynamics of flow align optimal subjective experience with the stretching of capacities, to find flow in what one is doing—to be caught

up in an activity from moment to moment for its own sake—is to *grow* (Csikszentmihalyi, 1990; Massimini & Delle Fave, 2000; cf. the Aristotelian notion of happiness as the realization of one's potentialities).

Emergent motivation has a second sense as well. Wholly new relationships and long-term goals may emerge as a result of positive subjective experience. People take note of their present experience and compare their subjective state to alternatives based on experiences in the past. If the present experience is more positive, then maintaining it becomes the goal; if it is less positive, then the goal becomes changing subjective experience in favor of one of the alternatives (Csikszentmihalyi & Nakamura, 1999). An experience may be positive in and of itself or because it solves a problem that was attended by negative experiential states. An unfamiliar or previously unengaging activity can become intrinsically motivating if a person happens to find flow in it (cf. functional autonomy of motives). The motivation to persist in or return to the new activity is emergent, arising out of the interaction itself. In this way, the experience of flow fosters the expansion of an individual's set of enjoyed pursuits, as distinct from the growth of capacities within an existing involvement. This expansion of a person's resources for enjoyment may occur because of chance encounters or because institutions or other people (e.g., parents, educators, peers) expose the individual to new experiences. Most reliably, however, it occurs through a person's own active exploration of the world.

It was intrinsic enjoyment that Nobel Laureate Pauling responded to, in moving toward chemistry as a hobby and, subsequently, a career. Looking back, Pauling explained, "I don't think that I ever sat down and asked myself, 'Now what am I going to do in life?' I just went ahead doing what I liked to do" (Creativity in Late Life Project, 1990a, p. 8). His direction in life was emergent: It took form out of the matrix of his experience, guided by discovery of what he enjoyed doing. Pauling's case illustrates how a new encounter, more positive than previous positive experiences, can give rise to a new goal. A life structure may form around flow activities discovered in this manner. Pauling recalled,

> First I liked to read. And I read many books. . . . When I was eleven, I began collecting insects and reading books in entomology. When I was twelve, I made an effort to collect minerals. . . . I read books on mineralogy, and copied tables of properties, hardness and color and streak and other properties of the minerals, out of the books. And then when I was thirteen I became interested in chemistry. (Creativity in Later Life Project, 1990a, p. 8)

Of his continued engagement with science at age 89, more than seventy years later, he observed,

> The question "[What currently is the] most important thing that I feel I *have* to do?" doesn't seem to me to be quite the right question. It might be: "What are the things that I do?" I work on problems in pure science, just to please me, by giving me the pleasure of thinking that I've solved a problem, or sometimes to satisfy my curiosity. (Creativity in Later Life Project, 1990a, p. 14)

THE EXPERIENCE OF MEANING

We have described the experience of intense involvement, or flow. The reader might at this point be of two minds—on the one hand convinced that experiencing whole-hearted involvement in the present is surely preferable to being bored or anxious, but on the other hand thinking that *flourishing* entails something beyond moments of enjoyment, in particular, a sense that one's pursuits serve a larger purpose or otherwise hold vital meaning. Indeed, at the outset of this chapter, we proposed that the optimal outcome of human development is a life characterized by the conjunction of enjoyment and meaning in one's endeavors. An experience that draws a person into participation in the world yet holds little subjective significance may be absorbing—but not vitally engaging. Involving activities are vitally engaging to the extent that they hold meaning for the individual.

The flow model insists neither that challenges nor skills must be strongly valued for an experience to be involving. It is the level of perceived challenge in relation to the person's level of skill, or capacities for action, that is an essential condition for flow and not the qualitative dimension, its perceived significance. A person in a barren waiting room may escape tedium by picking up and becoming briefly absorbed in a crossword puzzle that proves neither too easy nor too hard. Concentration may be high and the interaction enjoyed as long as it lasts, yet the activity may hold scant importance for the person. Its interruption is of little consequence. We suggest that there must be a germ of subjective importance in even a brief flow experience. However, it is possible for the individual to find minimal subjective importance in the aspects of the self that are realized in this brief encounter, or in the aspects of the world that the activity incorporates.

The rest of this chapter will explore the relationship between enjoyment and felt meaning, taking up the expansive topic of meaning specifically at its point of contact with flow theory. The question is how enjoyable experiences become subjectively meaningful or significant as well—that is, how flow leads to vital engagement. The answer proposed is that meaning can grow out of flow in the context of a sustained relationship with an object. We view long-term engagement with art or science as a model for vital engagement in other spheres of life.

Meaning

Rather than undertaking a review of the existing theory and research on meaning, we merely wish to recognize the existing landscape into which the phenomenon of vital engagement fits. Meaning, in particular the sense that life has meaning, was a central interest of mid-twentieth-century existential and humanistic psychology but held little interest within the behaviorist and cognitivist paradigms that prevailed. Since the 1980s, though, it has become the focus of renewed attention within psychology (Baumeister, 1991; Emmons, 1999; Wong & Fry, 1999). The desire for meaning is viewed as a basic human motivation. A sense that life has meaning is associated with well-being and is seen as necessary for long-term happiness. The sources of meaning in most people's lives (e.g., relationships, life goals, religious participation), the ways in which meaning is structured (e.g., through goal hierarchies), and the functions served by meaning all have received research attention.

Meaning can be distinguished on the basis of its *origins*, including enculturation, the push of confronted problems, and the pull of enjoyment. Much that is meaningful is taken for granted, woven early into experience, and as likely to be unarticulated as articulated (Berger & Luckmann, 1966); this is meaning that a person is "born into" by virtue of family, culture, and history. Alternatively, meaning may be actively formulated in response to a problem encountered during the course of a life; the resulting crisis of meaning "pushes" a person to create new goals or understandings. Dewey and many others (e.g., Csikszentmihalyi & Beattie, 1979) have ascribed a critical constructive role in human experience to the problems that are inevitably thrown up by life, triggering a person's reflection. Current studies of trauma and coping investigate how adverse experience is made sense of or becomes a source of meaning and how a person sustains a sense of meaning in the face of negative events (Cohler, 1991; Emmons, 1999). Finally, a "pull" model of the origin of meaning contrasts with both the enculturation and the "push" models. As a person is drawn onward by enjoyable interaction with an object, the meaning of the relationship gradually deepens. In this discussion of vital engagement, the focus will be on meaning that is rooted specifically in positive experience rather than in negative experience or early experience in general.

This *emergent meaning* merits investigation because it has been comparatively neglected and because it helps illuminate one route to vital engagement, the path that leads through experiences of flow. In focusing on long-term artists and scientists, we consider not isolated flow experiences but instead individuals who establish and sustain an intense relationship to a flow activity. They illustrate how a sense of meaning emerges out of an extended relationship with an object (including symbolic domains such as

physics or poetry) if transactions with the object are characterized by enjoyable absorption. People develop a felt sense of the positive significance of their relationship with the object, and this felt meaning deepens over time.

The Coincidence of Enjoyment and Meaning

Wrzesniewski, McCauley, Rozin, and Schwartz's (1997) study of people's relationship to their work provides data about the significance of enjoying meaningful participation in the world. Adults in a variety of occupations were able to say readily whether they experienced their work as a job, emphasizing its financial rewards; a career, emphasizing its opportunities for advancement; or a calling, emphasizing "enjoyment of fulfilling, socially useful work" (p. 21). When work is experienced as a calling, it exhibits the coincidence of positive subjective experience and meaningfulness that defines vital engagement. Individuals who view their work as a calling report both higher work satisfaction and higher satisfaction with life in general than those who view their work as a job or career.

There is anecdotal evidence that it may be difficult to sustain prolonged involvement in an endeavor that is experienced as significant if a person does not find enjoyment within the activity itself. If involvement is sustained anyway, subjective well-being may suffer. Colby and Damon (1992) described social activists as "joyfully absorbed" in their ongoing interactions with the world. These individuals experienced flow particularly in relating to others. The quality of subjective experience appeared to be secondary to the activists' profound commitment to valued ends and their sense that the work was worthwhile. At the same time, the few individuals who were struggling with burnout clearly deemed their work important while being unable to find enjoyment in the activity itself. In the same vein, the accounts of a small number of individuals who left medical careers (Ebaugh, 1988) suggest that the perceived significance of the activity was insufficient to make the occupation satisfying when the work process itself was not enjoyable.

There is evidence of a reverse pattern as well—that is, it may be difficult to commit oneself to an enjoyed activity if one cannot see the activity as important in a larger sense. The data come from a longitudinal study of talented adolescents using the ESM (Csikszentmihalyi et al., 1993). Teenagers still committed to involvement in their talent area were more likely than their less committed peers to have found the activity both absorbing and important earlier in high school. Of particular significance, neither pattern of incomplete engagement boded well for teenagers' continued commitment. The domains of science and art carried different risks. Teenagers withdrawing from math or science had been more likely than their still committed peers to experience the activities as important but stressful or boring. On the other hand, teenagers in the process of withdraw-

ing from the arts had been more likely than still committed peers to find the arts absorbing but lacking in long-term importance. Enjoyment without a sense of purpose or larger meaning did not foster commitment.

Emergent Meaning and the Creator's Enduring Relationship to a Domain and Field

There appears to be a form of subjective meaning that is intimately associated with involvement in a pursuit such as art or science when that involvement is a source of flow for the individual. This form of meaning appears to be an outgrowth of long-term, absorbing participation in a domain.

How does an activity that occasions flow come to be experienced as meaningful as well as absorbing? Just as goals can be emergent, arising out of the evolving interaction with the domain, so the felt sense of an endeavor's meaningfulness can be emergent, formed and deepened through experience as an individual interacts with the domain and with the associated community of practice or social field. Alternatively, as mentioned, information that an endeavor matters can be "presented" from outside the person, rather than experientially "discovered" (Csikszentmihalyi, 1985).

Talent plus enjoyment are not inevitably associated with a sense that an activity is important enough to warrant continued commitment (Csikszentmihalyi et al., 1993). What one can accomplish in a domain must be valued by the actor if it is to be vitally engaging. It is possible for an individual to see no future for him- or herself in an activity or to devalue the endeavor or the opportunities for action that the activity presents. This valuing is part of the information in consciousness that shapes a person's encounters with the domain. To say that meaning *emerges* is to say that interactions with the domain transform this information in consciousness.

Every flow experience has the potential for meaningfulness. Even a brief exercise of one's capacities holds a seed of subjective significance because it fully absorbs the self. However, felt meaning that is enduring arises when participation continues over time in an endeavor that stretches the person's capacities and is enjoyably absorbing.

In its most natural form, the relationship to the domain begins in attraction to the object (Renninger & Leckrone, 1991). A sense of the object's significance takes shape and matures concurrent with the development of a capacity to find flow in the domain. An example is the development of Pauling's interest in science. He was "entranced by chemical phenomena" (Pauling, 1970, p. 282) and by the enjoyment of solving individual problems. As he immersed himself in the problems of chemistry, he also came to see and value the prospect of constructing a deep and comprehensive understanding of the physical world:

> I became interested in chemistry. I was very excited when I realized that chemists could convert certain substances into other substances with quite different properties, and that this was essentially the basis of chemistry. . . . ever since then, I have spent much of my time trying better to understand chemistry. And this means really to understand the world—the nature of the universe. (Creativity in Later Life Project, 1990a, pp. 8–9)

When a person begins to perform within the rules of a symbolic domain, meaning begins to accrue from several sources: an identification with the domain, its history, traditions, and goals; a feeling of solidarity with the field and its practitioners; a self-image arising from one's own practice—from the peculiar style of one's work. Thus, with time, the sheer practice of one's calling generates layers of important meaning. Engagement in an artistic or scientific pursuit—or any other calling—begins to tie practitioners into a network of enterprises that connects them with the past and the future and locates them within an evolving human project—thus creating its own meaning. Consider, for example, some of the ways meaning develops through the lifelong creator's interactions with the field or community of practice.

The Field as a Source of Meaning

The felt significance of an enjoyed relationship to a domain develops in part through one's membership in a community of practice and interactions with other members of the community. If the state of the field is negative, interactions can render members' relationship to the domain less meaningful as well as corrode the quality of their experience. Insofar as the community or interactions with its members are positive, however, they can foster and deepen the meaning of the relationship to the domain.

The social context of artistic or scientific activity changes across the course of a career (for a review, see Mockros & Csikszentmihalyi, 2000). Three key formative influences on the individual's relationship to the domain are teachers, peers, and students. At the outset of a career, teachers can play a critical role in conveying the meaningfulness of a life in science or art to students who already *enjoy* the activity. In Bloom (1985) and colleagues' study of the development of talent, many young adult sculptors and mathematicians recalled that the most decisive factor in forming a commitment to a career was close contact with a teacher who was a working professional and modeled participation in the discipline as a vitally engaging way of life.

Peers, as coparticipants, can affirm, strengthen, and enrich at any point in life the emergent meaning of the relationship to the domain. One scientist in his 60s stressed the important role played by colleagues beginning when

his interest in science was first sparked in childhood and continuing through a series of collaborations down to the present. By sharing his enthusiasm, the first of many "best friends" or "buddies" played a key role in the formation of his sense that science would be an exciting and important domain to engage: "Pretty soon we were hunting butterflies together and after that we were fantasizing about expeditions and careers, and competing to see who could collect the most different kinds of butterflies" (p. 7). Together they went to the zoo and the natural history museum, "enthralled by the grandeur"; they tackled an advanced textbook, and were "awestruck" by its mysteries (Creativity in Later Life Project, 1994a).

The relationship to students or apprentices can play a major role in the continued enrichment of work's meaningfulness during a scientist's late career. A female scientist in her 60s placed great importance on her relationships with students, professing a strong sense that currently they connect her to the moving frontier of knowledge and carry her influence into the future. As she put it, "It keeps you part of the ongoing stream, even as you get older" (Creativity in Later Life Project, 1994b, p. 16). The meaning of her current work is substantially deepened by its embedding within a longer time frame than that of her own career.

Finally, even brief interactions and relationships that are symbolically mediated can enrich the relationship to the domain by providing a sense of community or fellowship that is coextensive with the domain's reach across time and place. As a writer in his 60s noted, after first enthusiastically enumerating the experiential rewards of writing:

> There are many, many nice things about it. . . . one can be a writer almost anywhere, at any place, any time. And that's nice. It makes for a nice fellowship, too. And the final thing that I just thought of, is a beautiful aspect of writing. And that is that you belong to human culture for, say, from Homer on. You're part of a great fellowship of human expression. There are works of high art in all these cultures that go back all these years. And there's something very beautiful about that. (Creativity in Later Life Project, 1994c, p. 9)

How does this wider sense of community emerge through lived experience? In this case, the writer's awareness of a global fellowship was sharpened through interactions with members of the extended community of writers. The writer recounted the moving experience of meeting native Africans in the remotest parts of the continent who were eager to share with him whole novels that they had inscribed in flimsy dimestore notebooks.

These examples could be multiplied endlessly. They suggest some of the ways in which a person's relationship to a domain forms and evolves within a community of practice. Of chief relevance, they illustrate how the person's relationship to this community of practice, and interactions with

specific members of it, can help create and sustain an emergent sense of the enterprise's significance. This connection to a community of practice is only one of the ways in which the gradual accumulation of connections tends to lead to a more complexly meaningful relationship to the world.

CONCLUSION

Vital engagement, a sustained self–object relationship that is both enjoyed and meaningful, is one feature of optimal development. Enjoyment, or flow, is found through the tackling of opportunities for action that challenge a person's existing skills. The resulting state of focused involvement is the same, regardless of the activity in which it is found. When the relationship is felt to be meaningful as well as absorbing, the person becomes vitally engaged. Often, extended engagement with a flow activity like science or art begins in a felt conviction that the object of attention is inherently important. In these cases, the enjoyment of the relationship and its meaning may increase together. In other cases, scientific or artistic endeavors are at first undertaken for the sake of their experiential rewards alone. Flow may provide a route to meaning, in that a flow activity's subjective significance will grow richer over the course of a creator's extended engagement with it.

In this chapter, the focus has been on meaning-making activities—art and science—but it need not have been. Vital engagement is possible not only in mature creative work and interests like hobbies and sports, but in a whole variety of activities—raising children, fostering another's learning, performing one's craft well, serving as custodian of an institution. In an engaged life, the conjunction of enjoyment and subjective meaning characterizes vocation, social relationships, participation in the community—a person's central relationships with the world.

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