

Personality and intelligence

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7 A living systems approach to the integration of personality and intelligence

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Introduction

In the psychological study of humans, there are four basic questions that one can address:

1. The *process* question: What is happening when a person functions? What are the basic events that comprise human functioning?
2. The *content* question: What is the substance, meaning, or organization of a person's thoughts, feelings, perceptions, or actions?
3. The *effectiveness* question: How well is the person functioning with regard to some internally or externally defined criterion?
4. The *developmental* question: What kinds of enduring changes have occurred, are occurring, or are likely to occur in the processes, content, and/or effectiveness of a person's functioning, and how do such changes occur?

Most of the major concepts in psychology represent different kinds of component *processes* of human functioning – for example, cognition, emotion, motivation, behavior, attention, perception, memory, and so forth. Because these are the basic psychological phenomena that students, scholars, and practitioners must deal with, this is an important and legitimate focus. However, these processes are intimately interconnected in complexly organized ways to form a whole person who is continually interacting with the environment in goal-directed sequences of activity designed to create desired states and outcomes in the person or in the relationship between the person and environment (M. Ford, 1992). Consequently, the study of functional processes takes on deeper meaning and practical significance only when they are addressed in the context of the other three questions. As Bevan (1991) explains, “specialized knowledge derives its meaning . . . from the context of larger perspectives and questions. When it loses touch with that larger context, it loses its coherence and meaning” (p. 475).

Personality is the core psychological construct used to address the content question in psychological research and practice; *intelligence* is the most common concept used to address the effectiveness question; and *learning* and *development* are the primary concepts used to address the developmental question. It is therefore not surprising that these latter four concepts are among the most important and historically prominent concepts defining psychology as a unified discipline capable of generating

useful knowledge. However, even in fields organized largely around these concepts (e.g., personality and cognitive and developmental psychology), there is a tendency to focus narrowly on particular components of human functioning rather than to frame problems in terms of broader issues that emphasize the meaning and significance of these component processes in people's everyday lives. As a result, there is a critical and growing need for broad, integrative theorizing in psychology. Indeed, the continued coherence of psychology as a unified field of study may depend on such theorizing.

[Psychology suffers from a crisis of disunity. . . . Psychology has so many unrelated elements of knowledge with so much mutual discreditation, inconsistency, redundancy, and controversy that abstracting general meaning is a great problem. . . . We need many unified theorists to save us from ever-increasing redundancy and artificial diversity. . . . Sheer production must be counterbalanced by an equally strong investment in weaving the unrelated knowledge elements together into the fabric of organized science. . . . Psychology has enormous potential power in its building materials, but that potential will only be realized by adding the architectural direction of unification efforts. (Staats, 1991, pp. 899, 905, 910)

In particular, theories are needed that link concepts focused on content, effectiveness, and developmental issues with each other and with detailed conceptualizations of component processes. Although there are a few exceptions (e.g., Bandura, 1986; Deci & Ryan, 1985, 1991; M. Ford, 1992; Gardner, 1983; Keating, 1984, 1990; Sternberg, 1985a; Vygotsky, 1978), most theories address just one or two of the basic questions described earlier (e.g., information-processing theories; causal-attribution theories; expectancy-value theories; emotion theories; developmental theories of component processes; psychometric theories of personality and intelligence). This is generally true of most systems theories as well (e.g., control-system models that focus narrowly on process components; general systems models that focus on the content themes organizing a system's functioning without explicating the processes involved in such functioning). A striking exception to this pattern, however, is D. Ford's (1987) Living Systems Framework (LSF), a comprehensive theory of human functioning and development that addresses in a direct and systematic way all four of the basic questions guiding the science and application of psychology.

What follows is, in part, a necessarily brief summary of the LSF concepts and principles pertaining to the problem of integrating the study of personality and intelligence. To obtain a more complete understanding of the living systems approach described in this chapter and its potential utility for scholars and professionals, the reader should consult *Humans as Self-Constructing Living Systems: A Developmental Theory of Behavior and Personality* (D. Ford, 1987), *Humans as Self-Constructing Living Systems: Putting the Framework to Work* (M. Ford & D. Ford, 1987), and/or *Motivating Humans: Goals, Emotions, and Personal Agency Beliefs* (M. Ford, 1992). To avoid repetitive citations of these volumes, they are not referenced further in this chapter except to highlight very specific contributions. However, the reader should understand that they are the source of much of the information included in this chapter.

Overview of the living systems framework

The roots of the Living Systems Framework (LSF) were firmly established three decades ago when D. Ford and Urban (1963), after devoting several years to the task of analyzing and comparing influential theories of psychotherapy, published their classic work, *Systems of Psychotherapy: A Comparative Study*. Based on this effort and his subsequent experiences in scholarly, professional, and administrative work, which convinced him of the need for multidisciplinary, multiprofessional approaches to understanding and improving the human condition, D. Ford formulated the core ideas of the LSF in the late seventies. After several years of elaborating, refining, and testing these ideas, a two-volume set of books was published describing the LSF and illustrating its utility for stimulating theoretical advances, guiding research, and facilitating the work of health and human service professionals (D. Ford, 1987; M. Ford & D. Ford, 1987).

Congruent with Staats' (1991, p. 910) emphasis on "adding the architectural direction of unification efforts" to the powerful "building materials" available in psychology's many areas of specialization, the LSF was constructed by wedding together the best that psychological science has to offer in terms of component minitheories and supporting evidence within a common framework representing human functioning and development in terms of a self-organizing, self-constructing adaptive control system (i.e., a living system). Thus, it is not an alternative to existing theories in fields such as cognition, motivation, behavior, personality, and development; rather, it is an integrative framework designed to help psychological scholars and professionals organize and build upon the useful theory and solid empirical work produced in many different specialized fields of study. Consistent with this goal, the LSF has recently produced two theoretical offspring - Motivational Systems Theory (MST; M. Ford, 1992) and Developmental Systems Theory (DST; D. Ford & Lerner, 1992) - each of which was created by integrating major components of the LSF with other recent theoretical advances.

Substantively, the LSF is composed of a variety of integrated conceptualizations which focus on:

1. *the unitary functioning of the whole person-in-context*, as manifested in complexly organized, goal-directed patterns of activity (including both content and process aspects of these patterns);
2. *the functioning of the component parts of the person*, including directive cognitions (personal goals), regulatory cognitions (evaluative thoughts), control cognitions (planning and problem-solving thoughts), information processing and memory functions, attention- and consciousness-arousal processes, emotional-arousal processes, transactional processes (e.g., motor and communicative actions), activity-arousal processes, and biological processes (environmental processes are also included in the framework since the basic unit of analysis is the person-in-context);
3. *processes of change and development* in the functioning of the component parts of the person and the person-as-a-whole, including concepts and principles representing stability maintaining, incremental change, and transformational change phenomena.

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Thus, the LSF provides a way of thinking about not only the component processes of human functioning, but also the dynamic, integrated functioning of these processes in content-laden patterns designed to produce effective functioning (i.e., the attainment of relevant personal goals). It also describes how these patterns can "add up" over time and across contexts to produce a unique, self-constructed personality and developmental history. Moreover, it explains how behavior patterns can be strengthened or altered through a diversity of change processes.

Basic strategy of the living systems framework

Science and practice often advance by taking a model of demonstrated utility in one field and transforming it in a way that makes it applicable and useful for some other field. As has become increasingly popular in the social and behavioral sciences (Campion & Lord, 1982; Carver & Scheier, 1981, 1982, 1985, 1990; Hollenbeck, 1989; Hyland, 1988; Klein, 1989; Lord & Hanges, 1987; Lord & Kernan, 1989; Powers, 1973, 1989), the starting point for the construction of the LSF was the familiar model of a control system. In a simple control system (e.g., a thermostat), activity is generated whenever a discrepancy is perceived between current conditions and some desired state or consequence. In other words, the system is designed to "control" some variable that is being monitored by an information-collection function and evaluated by a comparator or regulatory function, based on the command of a directive function. This is a flexible arrangement, but limited in several important ways. For example, such systems are unable to invent new goals, to construct new action capabilities, or to alter or repair their "hardware" or "software" if they no longer are able to produce the desired consequence. They are designed to function in one way, and can never function in any other way.

By adding multiple options to one or more components of a simple control system (e.g., multiple goals, plans, regulatory rules, or action capabilities), one can construct an adaptive control system in which increasingly complex and flexible functional patterns are possible (e.g., chess playing by a computer or automatic piloting of an airplane). Such systems can not only react to current conditions (using "feedback" information from a variety of sources), they can also anticipate possible future consequences (using "feedforward" information) and adjust their behavior accordingly. Nevertheless, an adaptive control system, no matter how sophisticated, is still just a "fancy machine."

In contrast, human beings not only have the properties of an adaptive control system, they also have two additional capabilities that enable them to transcend the fundamental limitations of a mechanistic control system: biological self-constructing capabilities and behavioral self-constructing capabilities. In other words, unlike a "fancy machine," people can construct, elaborate, and repair their own "hardware" or biological structure (e.g., through biological growth and maturation and repair of damaged tissue), as well as construct, elaborate, and revise their own "software" or

behavioral repertoire (e.g., through learning and skill development). That is how a young infant can develop into a mature adult, how a novice can become an expert, and how people can change major components of their basic "personality." Thus, a human being is a self-constructing adaptive control system, or in simpler terms, a living system.

Basic concepts representing the content and effectiveness of human functioning

The principle of unitary functioning

Perhaps the most fundamental guiding assumption of the ISF is the Principle of Unitary Functioning, that is, the assumption that a person always functions as a unit in coordination with the environments in which he is functioning. The key to maintaining unitary functioning among the diversity of biological systems, thought processes, emotional states, motor skills, communicative patterns, and other functions that a person is capable of displaying is *organization*. Indeed, organization is the essential defining property of a system. Organization exists when various components are combined in such a way that the whole is different from the sum of the parts. This "difference" involves both gains and losses. In one sense, the whole is greater than the sum of the parts because new qualities or capabilities emerge from the relationships among the parts that none of the parts could accomplish on their own (e.g., a tree house can emerge from a pile of wood; a stronger and more secure relationship can emerge from a marriage). However, in another sense the whole is less than the sum of the parts because the functioning of each of the parts has been restricted by virtue of being "locked in" to a particular organizational form (e.g., the pieces of wood can no longer be used in some other creation; the spouses will need to accept certain restrictions on their personal freedom). Relationships between system components that yield new properties and possibilities are called *facilitating conditionalities*. Relationships between system components that reduce the range of possibilities to some smaller subset are called *constraining conditionalities*.

The concept of behavior episode

Understanding the organization of complex behavior patterns is the key to understanding the overall content and effectiveness of a person's functioning. Thus, some practical way of representing the organized flow of a person's complex behavior patterns is needed. The ISF uses the concept of *behavior episode* to represent coherent sequences of unitary person-in-context functioning. A behavior episode is defined as a context-specific, goal-directed pattern of behavior that unfolds over time until one of three conditions is met: (1) the goal organizing the episode is accomplished, or accomplished "well enough" (sometimes called "satisficing"); (2) the person's attention is preempted by some internal or external event, and another goal takes precedence (at least temporarily); or (3) the goal is evaluated as unattainable,

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at least for the time being (cf. Pervin, 1983; Simon, 1967). For example, a weekend exam-grading episode initiated by a college professor may continue until (1) she has finished grading all of the exams; (2) she is distracted by hunger, a telephone call, a crying child, or some other compelling event; or (3) she decides she is unable to complete the task, at least for now (e.g., because she is too tired to concentrate on the task at hand).

The goal of the episode (i.e., the person's cognitive representation of the desired state or outcome he would like to achieve) provides direction for the episode, and triggers an organized pattern of cognitive, emotional, biological, and perceptual-motor activity that, in coordination with the opportunities and constraints in the environment, is designed to attain the goal. Thus, goals and contexts are the anchors that organize and provide coherence and meaning to the activities within a behavior episode. These activities (or *behavior patterns*) are often varied and complex, since many behavior episodes involve the simultaneous pursuit of multiple goals in some what unpredictable environments. Indeed, it is impossible to understand the meaning or significance of most human activities without understanding the goals and contexts that organize them (D. Ford, 1987; Schutz, 1991).

Virtually all human activity — whether it involves work, play, social relationships, or solitary activity — is organized in behavior-episode form. Some episodes may be directed by goals that are vague, transient, or out of awareness (e.g., episodes in which people are daydreaming; watching TV, or "hanging out" with their friends), but even in these episodes there is usually some degree of coherence evident in the ongoing stream of activity (Csikszentmihalyi, 1990; Larsen, Ham, & Ratella, 1989; Pervin, 1983). Thus, behavior episodes are like stories on a television news show that is on 24 hours a day, every day. One episode follows another, each one coherent and meaningful in its own right. Many episodes are, like most news stories, rather mundane and repetitive; other episodes build upon one another to tell a larger story (like a news program's coverage of a war or a baseball pennant race); and still other episodes are isolated, one-of-a-kind events that have little to do with the rest of life's activities (like coverage of a freak accident or special human interest story).

It is useful to distinguish among three qualitatively different kinds of behavior episodes (D. Ford, 1987). In an *instrumental episode*, the person is actively engaged in some motor or communicative activity ("output") designed to influence the environment in some way, and is actively seeking feedback information ("input") from the environment about the results of that activity. In an *observational episode*, the person is seeking relevant informational "input" from the environment through sensor-perceptual processes such as looking, listening, or touching, but there is no "output" to speak of because the person is not trying to influence the environment. In a *thinking episode*, both the output and input processes are inhibited, and there is only "throughput" — that is, instead of trying to influence or obtain information from the environment, the goal is to try to improve the organization of some information that the person already has, or to construct or rehearse a plan for future action from such information.

Many complex activities involve all three kinds of episodes. This is a productive arrangement because different kinds of episodes tend to focus a person's attention on different component processes (e.g., knowledge acquisition in observational episodes versus planning and evaluation in thinking episodes versus acting and perceiving in instrumental episodes). For example, a father teaching his son how to hit a baseball might first demonstrate this skill, then explain the basic concepts involved in successful performance of the skill, and then help his son practice this skill. Similarly, a therapist trying to help someone overcome a phobia might use a combination of imagery, observation, and guided practice techniques to accomplish this objective.

The concept of behavior episode schema/schemata

Behavior episodes are temporary phenomena that come and go like stories on a news program, but with one notable exception: it is impossible to return a behavior episode. And yet, people do guide their behavior in new episodes by using experiences from past episodes. That is possible because, like a VCR with fancy editing capabilities, people can remember past episodes and combine them with memories of similar episodes. Thus, behavior episodes provide the raw materials from which people can construct a complex repertoire of enduring behavior patterns. The concept of *behavior episode schema/schemata* (BES; schemata is the plural of schema) is used in the LSF to represent the product of this behavioral self-construction process. A BES is an integrated internal representation of a particular kind of behavior episode experience or, more commonly, a set of similar behavior episode experiences (including episodes that have only been imagined or observed). "Similarity" is in the eye of the beholder, but it is primarily a function of the degree to which different behavior episodes involve the pursuit of similar goals in similar contexts (recall that goals and contexts are the anchors that organize behavior episodes).

A BES represents the functioning of the whole person-in-context, since that is what is involved in any given behavior episode. The BES concept is therefore similar to concepts such as motor schema (e.g., Schmidt, 1975), perceptual schema (e.g., Arbib, 1989), cognitive schema (e.g., Neisser, 1976), or self-schema (e.g., Markus, Cross, & Wurf, 1990), but broader in that it represents an integrated "package" of thoughts, feelings, perceptions, actions, biological processes, and relevant contexts. Some parts of a BES are accessible to consciousness and some are not. Moreover, the parts that are consciously accessible may vary across BESs.

Functionally, a BES provides guidance about what one should pay attention to and how one should think, feel, and act in a specific behavior episode. In this sense, it is analogous to Neisser's (1976, 1985) concept of anticipatory schema. The quality of this guidance can vary tremendously, however (Arbib & Hesse, 1986). The guidance provided may be very concrete and detailed or quite general and vague. Key components may be fully automatized or require a great deal of attentional effort and conscious control to maintain effective functioning (Stemberg, 1985a). The organization of a BES is therefore a primary factor in determining the effectiveness of a

behavior pattern. For example, a physician or psychologist specializing in a particular type of problem will be able to proceed with great efficiency and confidence when a patient or client presents a familiar symptom pattern. Conversely, if the best available BES for a given situation is weak or disorganized, the person's activity is likely to be erratic, tentative, or inappropriate for that situation. For example, a teenager who has recently learned to drive may display poor judgment or react slowly to a situation that a more experienced driver could handle easily and automatically. Like the behavior episodes from which they are constructed, BESs are anchored by goals and contexts. Consequently, only those BESs that include goal and context characteristics similar to those of the current behavior episode will be potentiated and available for use in organizing that new episode. Arbib and Hesse (1986) also emphasize this point in discussing their related concept of schema:

We must specify the goal of the actor and the environmental situation . . . to be able to specify the action appropriate within a particular schema. The execution of the action brings with it certain expectations as to consequent changes in the environment; and the match or mismatch that results will determine the ensuing course of action. (p. 68)

Understanding the anchoring role of goals and contexts in behavior episodes and BESs can help explain a diversity of behavior patterns that may seem ineffective or inappropriate to an observer, but that are actually quite sensible and productive given what the person is trying to accomplish. For example, a normally gentle parent may respond harshly and abruptly to a misbehaving child if the transgression is unusually severe (e.g., running out into the street), or if her primary concern at that time is the completion of some urgent task. A student who is perfectly capable of answering a teacher's questions may avoid doing so if he believes that his peers disapprove of academic effort or accomplishment, and he cares more about the approval of his peers than the approval of his teacher.

The principal that behavior patterns are organized around goals and contexts can also help account for the commonplace finding that people often do not use the capabilities they have learned in one situation in other seemingly relevant situations. For example, educators and psychotherapists have found that transfer of training (i.e., application of a learned skill to new situations) is unlikely to occur unless one explicitly attempts to promote such transfer (Goldstein & Kanfer, 1979). Child-development researchers have also been misled by the pervasive belief that behavior should be consistently controlled by highly generalized "mental structures." Because the initial BES that young children construct tend to be goal-, behavior-, and context-specific, researchers often mistakenly infer that a child lacks some capability on the basis of evidence that he or she failed to display that capability on a particular experimental task. Yet, in many cases it may simply be that the experimental task is sufficiently different from the kinds of episodes normally experienced by the child that it does not activate the child's relevant BES. Indeed, the decline of generalized stage theories of development can be attributed largely to repeated empirical demonstrations of "inconsistency" in performance across tasks viewed as similar by researchers, but not by children (e.g., Demetrou & Eklides, 1981; McDevitt & Ford,

1987), including demonstrations of "preocious" performance on tasks designed to be familiar and understandable to the child (e.g., Borke, 1971; Maratsos, 1973; Meng-Peterson, 1975).

As the preceding examples illustrate, the anchoring of BES to goals and contexts, while facilitating the process of constructing concrete and meaningful guides to behavior, can constrain the process of transferring useful BES to new episodes. To overcome this limitation, humans have developed the capability of constructing cognitive representations of BES components and component relationships, typically called concepts (or constructs) and propositions (or rules or theories), respectively. Concepts and propositions are powerful tools in learning and communication because they are much less constrained by the contexts, goals, and activities involved in the BES from which they were constructed. This allows them to be integrated into other BES and combined with other concepts and propositions with relative ease. This not only facilitates knowledge construction and skill development within the individual, it also plays a key role in the cultural transmission of knowledge. That is because it is much easier to construct shared meanings from abstracted BES components, which tend to be relatively simple and general, than from whole BES units, which tend to be complex and somewhat idiosyncratic.

On the other hand, it is important to understand that concepts and propositions, by themselves, lack meaningful content and personal significance precisely because they have been divorced from particular goals, contexts, and activities. It is only when concepts and propositions are embedded back into a personalized BES that they become infused with personal meaning and utility. This is the "missing link" in much of education - information is taught in the form of abstract concepts and propositions to facilitate communication and generalization, but is too often left unconnected to the real-world contexts and purposes for which it can be used. Having students use concepts and propositions in personally meaningful behavior episodes helps bring their meaning to life.

Once a BES has been constructed, it can be elaborated or combined with other BES and BES components. Over time, this can yield a very powerful BES encompassing a diverse repertoire of optional behavior patterns organized around a related set of goals and contexts. By combining a number of such BES together, a qualitatively superior kind of expertise called *generative flexibility* can emerge. This ability to quickly and flexibly generate effective options for achieving a particular set of goals is characteristic of exceptionally resourceful people such as clever lawyers, imaginative chefs, elusive NFL quarterbacks, expert video game players, and highly skilled auto mechanics.

BES can also be elaborated by linking them together in sequential fashion to produce a "script." A script serves as a template for a stereotyped sequence of events (Abelson, 1981), as illustrated by the performance of a musician in an orchestra, a politician giving a speech, or a gymnast executing a routine. Well-rehearsed scripts (sometimes also called "habits") can greatly facilitate the execution of precise, efficient behavior patterns; however, they tend to be lacking in generative flexibility.

In fact, the essential value of "automated" scripts or habits is to eliminate such variability! Scripts are therefore most effective in contexts that require close conformity to a set of rules or conventions (e.g., behaving properly in school or church), and in repetitive situations where efficiency is highly valued (e.g., driving to work, shopping for groceries, putting the kids to bed).

The concept of personality

The field of personality psychology seeks to distinguish itself from other specializations by its focus on the content and organization of enduring patterns of functioning, particularly those that transcend particular situations or particular component processes. Unfortunately, traditional methods of representing such patterns (e.g., traits, dispositions, and attitudes) have been of limited utility because they have failed to deal adequately with the functional variability characterizing most behavior patterns (Mischel, 1968). Some personality theorists (e.g., Bandura, 1986; Carver & Scheier, 1981, 1982; Dweck & Leggett, 1988; Mischel, 1973) have addressed this problem by trying to identify cognitive and social-cognitive processes that are variable in content but that nevertheless may play a major role in organizing an individual's functioning (e.g., goal orientations, beliefs about personal agency, self-regulatory processes, coping strategies, etc.). This has been a useful and productive approach; however, because most such theories lack a broader conception of unitary functioning in which to anchor their major constructs, it has left many wondering what happened to the "person" in personality. Indeed, this is currently the major barrier to progress in the field of personality psychology. Without some way of representing how the component processes of the person function as a unit, personality researchers cannot put their "person variables" together to make a person (D. Ford, 1987). For example, Mischel's cognitive social learning theory (Mischel, 1973) and Bandura's social cognitive theory (Bandura, 1986) offer a rich menu of person variables, but no clear set of propositions specifying how these variables operate in an organized fashion at the level of the whole person-in-context.

The LSF resolves these dilemmas by defining personality as the person's repertoire of stable, recurring behavior episode schemata. In particular, stable, recurring BES that are psychologically anchored by salient personal goals (i.e., BES that are particularly meaningful and significant to the person) are seen as the core defining features of an individual's personality. Because BES represent coherent, dynamic patterns of person-in-context organization, this definition provides a way of focusing on both process and content considerations in human functioning. Moreover, because BES may be anchored to very broad or very specific sets of goals and contexts, and because the number and range of optional components and ways of combining those components in any given BES may vary tremendously, the LSF conceptualization of personality enables one to resolve the longstanding debate regarding person versus situational determinants of behavior (i.e., both consistency and variability in functioning can be understood in BES terms). For example, people can be expected to

manifest a high degree of temporal and situational consistency in their behavior patterns if their most prominent BES are anchored by unusually broad sets of goal and contexts, or if they have developed highly scripted or stereotyped patterns of goal seeking for a diversity of goals and contexts. Conversely, people may manifest a great deal of situational and temporal variability if they are involved in an unusually diverse range of activities or social roles involving very different kinds of goals and contexts, or if they are suffering from problems of "personality integration" in which they are unable to coordinate important subsets of their BES repertoire (as illustrated by identity crises, multiple-personality disorders, and the like).

Since BES representations include all aspects of an individual's functioning, personality attributes or "traits" may be defined in terms of thought patterns (e.g., an "optimistic," "paranoid," or "analytical" person), emotional patterns (e.g., an "anxious," "hostile," or "depressed" person), action patterns (e.g., a "shy," "aggressive," or "compulsive" person), or any other component process or combination of component processes that are particularly salient features of a stable, enduring set of BES (e.g., "hardness," "Type A" behavior, or "dysfunctional" personality). However, because personal goals provide the psychological anchors for BES, a particularly informative way to describe the basic content of a person's functioning (i.e., their personality) is through assessments that yield information about the most significant and meaningful goals in a person's life. As Csikszentmihalyi (1990) explains, "more than anything else, the self represents the hierarchy of goals that we have built up, bit by bit, over the years" (p. 34). Indeed, one of the most promising recent developments in the field of personality psychology is an emerging emphasis on goal content, goals hierarchies, and the use of goal assessments to represent the core features of personal hierarchies (e.g., Cantor & Kihlstrom, 1987; Csikszentmihalyi, 1990; Emmons, 1986, 1989; M. Ford, 1992; M. Ford & Nichols, 1991, 1994; Lazarus, 1991; Markus & Nurius, 1986; Markus & Ruvolo, 1989; Nichols, 1991; Pervin, 1989; Winell, 1987).

Recent efforts to study broad patterns of goal content have led to the development of several new procedures for representing goal hierarchies at the BES level of analysis. For example, M. Ford and Nichols (1987, 1991, 1994) have constructed the Assessment of Personal Goals (APG) to measure the general strength of each of the 24 goals in their Taxonomy of Human Goals (see Table 7.1). The APG is a self-administered paper-and-pencil instrument composed of 24 five-item scales. A diversity of item content is included in each scale in an effort to insure that, in each case, the overall estimate of goal strength is representative of the broadest possible range of contexts. Goal hierarchies can then be represented in terms of a profile of scores that highlights goals that are particularly likely or unlikely to be of concern to the individual in contexts that afford the attainment of that goal.

Because the personality profiles provided by the APG are described in terms of standardized categories (i.e., those included in the Taxonomy of Human Goals), they are particularly useful when groups of people are being assessed (i.e., when data must be aggregated across individuals) or when comparisons across individuals need to be made. For example, the APG can facilitate the efforts of marriage and relationship

counselors who need some way of comparing the goal priorities of different clients. It can also provide useful information to an employer who wants to compare a particular goal profile with that of some normative or exemplary group. However, idiographic methods of assessing goal content are generally preferable in research designs and applied settings involving the individual case. Such procedures can utilize the self-constructed labels or mental images of the individual being assessed to describe the person's interests and concerns, thus yielding a more precise representation of the hierarchy of goals defining the basic content of a particular individual's personality.

For example, Nichols (1991) has developed a companion measure to the APG, called the Assessment of Core Goals (ACG), in which an idiographic process is used to accomplish essentially the same purpose as the APG, namely, the identification and verbal labeling of broad, pervasive goals that may often function outside of awareness. The ACG is a carefully organized sequence of structured exercises through which an individual can move in incremental fashion toward a highly specific and personalized definition of their most central and powerful sources of motivation. This process involves four steps. In Step 1, participants recall and list past experiences that were exceptionally satisfying or enjoyable. Because strong positive affect signals the attainment of important personal goals (D. Ford, 1987; Nichols, 1990), it is assumed that core goals were probably involved in most of these experiences. The Ford and Nichols Taxonomy of Human Goals is used in this step as a prompt to help insure that a broad range of experiences is considered in generating the list. In Step 2, participants more carefully examine up to 15 of these experiences and try to identify for each one the moment of peak satisfaction and the specific event that triggered that feeling. This step is designed to help the person focus on the specific behavior episode in which the core goal was actually attained. In Step 3, participants search for common underlying themes with regard to the goals being satisfied by these 15 experiences and begin the process of trying to construct accurate verbal representations of these themes. This is accomplished by grouping together experiences that seem to have produced the same or a similar ultimate result. This convergence of different experiences that satisfy the same underlying goal is essential to the identification of fundamentally important goals that guide behavior across many different contexts. Finally, in Step 4, participants work to refine and test their initial goal representations until they have defined their unique set of core goals with the greatest clarity and precision possible. Clinical evidence collected thus far indicates that most people define between one and five core goals through this process (Nichols, 1990, 1991).

The ACG's selective focus on "core" goals is based on the clinical observation that people generally have a small set of personal goals that are so important to them that a large portion of their strong feelings of satisfaction and frustration can be traced to these central organizing concerns. Indeed, some ACG respondents have reported having trouble thinking of any highly satisfying experiences that did not satisfy at least one of their core goals. In other cases the connections between core goals and

	Desired within-person consequences
Affective goals	
Entertainment	Experiencing excitement or heightened arousal; Avoiding boredom or stressful inactivity
Tranquility	Feeling relaxed and at ease; Avoiding stressful overarousal
Happiness	Experiencing feelings of joy, satisfaction, or well-being; Avoiding feelings of emotional distress or dissatisfaction
Bodily sensations	Experiencing pleasure associated with physical sensations, physical movement, or bodily contact; Avoiding unpleasant or uncomfortable bodily sensations
Physical well-being	Feeling healthy, energetic, or physically robust; Avoiding feelings of lethargy, weakness, or ill health
Cognitive goals	
Exploration	Satisfying one's curiosity about personally meaningful events; Avoiding a sense of being uninformed or not knowing what's going on
Understanding	Gaining knowledge or making sense out of something; Avoiding misconceptions, erroneous beliefs, or feelings of confusion
Intellectual creativity	Engaging in activities involving original thinking or novel or interesting ideas; Avoiding mindless or familiar ways of thinking
Positive self-evaluations	Maintaining a sense of self-confidence, pride, or self-worth; Avoiding feelings of failure, guilt, or incompetence
Subjective organization goals	
Unity	Experiencing a profound or spiritual sense of connectedness, harmony, or oneness with people, nature, or a greater power; Avoiding feelings of psychological disunity or disorganization
Transcendence	Experiencing optimal or extraordinary states of functioning; Avoiding feeling trapped within the boundaries of ordinary experience
	Desired person-environment consequences
Self-assertive social relationship goals	
Individuality	Feeling unique, special, or different; Avoiding similarity or conformity with others
Self-determination	Experiencing a sense of freedom to act or make choices; Avoiding the feeling of being pressured, constrained, or coerced
Superiority	Comparing favorably to others in terms of winning, status, or success; Avoiding unfavorable comparisons with others
Resource acquisition	Obtaining approval, support, assistance, advice, or validation from others; Avoiding social disapproval or rejection
Integrative social relationship goals	
Belongingness	Building or maintaining attachments, friendships, intimacy, or a sense of community; Avoiding feelings of social isolation or separateness
Social responsibility	Keeping interpersonal commitments, meeting social role obligations, and conforming to social and moral rules; Avoiding social transgressions and unethical or illegal conduct
Equity	Promoting fairness, justice, reciprocity, or equality; Avoiding unfair or unjust actions
Resource provision	Giving approval, support, assistance, advice, or validation to others; Avoiding selfish or uncaring behavior

Task goals	
Mastery	Meeting a standard of achievement or improvement; Avoiding incompetence, mediocrity, or decrements in performance
Task creativity	Engaging in activities involving artistic expression or creativity; Avoiding tasks that do not provide opportunities for creative action
Management	Maintaining order, organization, or productivity in daily life tasks; Avoiding sloppiness, inefficiency, or disorganization
Material gain	Increasing the amount of money or tangible goods one has; Avoiding the loss of money or material possessions
Safety	Being unharmed, physically secure, and free from risk; Avoiding threatening, depriving, or harmful circumstances

satisfying and dissatisfying life experiences are harder to establish, either because the person has difficulty with the process of identifying and labeling their core goals, or because their goal hierarchy has many context-specific goals that are not clearly linked to more fundamental terminal goals. In this respect it is useful to think of core goals as being analogous to factors in a factor analysis – usually a small number of them are responsible for a large proportion of the “variance” in an individual’s personality, but in some instances a less interpretable “factor solution” will emerge.

Another measure designed to abstract broad patterns of goal content from idiographic descriptions of specific behavior-episode experiences is Winell’s AIMS (Adult Intentional and Motivational Systems) Interview (Wadsworth [Winell] & Ford, 1983; Winell, 1987). This measure, which is also available in a self-administered paper-and-pencil format as part of the Personal Goals Inventory (PGI), yields a matrix representation of a person’s short-, medium-, and long-term goals in six life domains: work and school, family, social life, leisure activities, personal growth and maintenance, and material/environmental concerns (i.e., the AIMS Chart). Attributes of these goals (e.g., importance, opportunity, difficulty, and clarity) are then assessed using the second part of the PGI, called the Goal Description Scales.

Emmons’ (1986, 1989) “personal striving” approach to personality provides yet another way to represent goal hierarchies using idiographic descriptions of goal content. “Personal strivings refer to the typical types of goals that a person hopes to accomplish in different situations. . . . A personal striving . . . unites what may be phenomenically different goals or actions around a common quality or theme” (Emmons, 1989, p. 92). Personal strivings can be thought of as personalized and contextualized versions of the abstract goal categories represented in the Ford and Nichols Taxonomy of Human Goals, as illustrated by these examples of personal strivings provided by Emmons (1989): “set aside time for ‘emotional rest’ each day” (Tranquility), “make a good impression” (Resource Acquisition), “show that I am superior to others” (Superiority), “make life easier for my parents” (Resource Provision), and “have as much fun as possible” (Entertainment). The *Personal Striving Assessment Packet* (Emmons, 1986) provides the tools needed to represent the nature

of and relationships among a diversity of goals represented in this form, which Emmons (1989) characterizes as "the level of analysis that conveys an optimal amount of information about an individual" (p. 121).

Strategies for assessing goal hierarchies at a somewhat more context-specific level of analysis – usually in terms of temporally extended, goal-directed patterns of activity (or potential activity) – have also been developed in recent years, as illustrated by Kingler's (1977, 1987) work on "current concerns," Little's (1983, 1989) research on "personal projects," Cantor's focus of "life tasks" (Cantor & Fleeson, 1991; Cantor & Kihlstrom, 1987; Cantor & Langston, 1989), and Markus' work on "possible selves" (Markus & Nurius, 1986; Markus & Ruwolo, 1989). These efforts further illustrate the importance and heuristic value of trying to represent personality in terms of broad patterns of goal content.

The concepts of achievement and competence

The ISF approach to conceptualizing the content and organization of behavior and personality leads very logically to an emphasis on *goal attainment* as the primary criterion for defining and assessing the effectiveness of human functioning. At the level of a particular behavior episode, this means successfully achieving the goal of the episode within the circumstances and criteria defined by the context anchoring the episode. Thus, *achievement* is the concept used to describe effective functioning at the behavior-episode level of analysis. Achievement is defined as the attainment of a personally or socially valued goal in a particular context.

At the BES (i.e., personality) level of analysis, *competence* is the concept used to describe effective functioning. Because evaluations of effectiveness at this level of analysis must take into account possible consequences for a diversity of behavior episodes beyond the immediate episode, competence is defined by adding ethical and developmental boundary conditions to the anchoring criteria of goals and contexts. Specifically, competence is defined as the attainment of relevant goals in specified environments, using appropriate means and resulting in positive developmental outcomes.

Although not a major focus of this chapter, it is useful to note that, with regard to component processes, there are four major prerequisites for effective functioning in any given behavior episode: (1) the person must have the motivation needed to initiate and maintain activity until the goal directing the episode is attained (this category includes the component processes of personal goals, emotional-arousal patterns, and personal-agency beliefs); (2) the person must have the skill needed to construct and execute a pattern of activity that will produce the desired consequences (this category includes transactional processes, information processing and memory functions, attention- and consciousness-arousal processes, activity-arousal processes, and control- and performance-evaluation cognitions); (3) the person's biological structure and functioning must be able to support the operation of the motivation and skill components; and (4) the person must have the cooperation of a responsive

environment that will facilitate, or at least not excessively impede, progress toward the goal (i.e., the environment must be congruent with an individual's "agenda" of personal goals and the person's biological, transactional, or cognitive capabilities; it must have the material or informational resources needed to facilitate goal attainment; and it must provide an emotional climate that supports and facilitates effective functioning). Thus, at a broad level it is possible to describe the processes contributing to effective person-in-context functioning using the following heuristic formula (M. Ford, 1992):

$$\text{Achievement/Competence} = \frac{\text{Motivation} \times \text{Skill}}{\text{Biology}} \times \text{Responsive Environment}$$

In other words, effective functioning requires a motivated, skillful person whose biological and behavioral capabilities support relevant interactions with an environment that has the informational and material properties and resources needed to facilitate (or at least permit) goal attainment. If *any* of these components is missing or inadequate, achievements will be limited and competence development will be thwarted.

The concept of intelligence

Like the concept of competence, intelligence is a concept used to characterize effective functioning at the BES level of analysis – that is, intelligence represents a pattern of effective functioning, or the potential for effective functioning, across a variety of behavior episodes. Indeed, the concept of intelligence is sometimes defined essentially as a synonym for competence – that is, in terms of criteria representing the attainment of relevant goals in specified environments (as in definitions emphasizing performance accomplishments or adaptation to the values and demands of a particular social-cultural context) (e.g., M. Ford & Tisak, 1983; M. Ford, 1986a, 1986b; Kornhaber, Krechevsky, & Gardner, 1990; Sternberg & Wagner, 1986). Of course, many theories of intelligence do not take such an explicitly outcome-oriented approach. In fact, it is perhaps more common for definitions of intelligence to emphasize particular component processes (e.g., information-processing capabilities, reasoning and problem-solving skills, or neural processes) that contribute to effective functioning but that do not actually represent effective functioning (e.g., Eysenck, 1987). Nevertheless, virtually all conceptions of intelligence pertain, at least indirectly, to the bottom-line issue of functioning effectively with respect to a broad range of goals and contexts. Thus, intelligence can be defined, at least in very general terms, as a characteristic of a person's functioning associated with the attainment of relevant goals within some specified set of contexts and evaluative boundary conditions.

By specifying more precisely the different characteristics of a BES repertoire that may be associated with effective functioning in various kinds of behavior episodes, it should be possible to develop a taxonomy of the different prototypical meanings

associated with the concept of intelligence. This strategy is somewhat analogous to the efforts of Sternberg and his colleagues to identify prototypes of competence and intelligence (Sternberg, 1985b, 1990; Sternberg, Conway, Ketron, & Benstein, 1981). However, the present analysis uses the ISF as a starting point rather than beginning with people's judgments about effective functioning. This way of proceeding enables one to focus on effectiveness criteria that can be applied to *any* content rather than confounding effectiveness criteria with the specific content valued by a particular set of respondents.

Such an approach addresses one of the most persistent problems in efforts to conceptualize intelligence, namely, the failure to draw a careful distinction between those aspects of an intelligence assessment that involve value judgments (i.e., content judgments about the qualities or accomplishments that should be valued by a particular culture, context, or individual), and those that involve "factual" matters that are subject to some kind of empirical evaluation (M. Ford, 1992). Without such a distinction, it is almost inevitable that scientific debates about the nature of intelligence will become entangled with value-laden disagreements about what kinds of qualities or accomplishments should be considered in an assessment of intelligence. For example, the question of whether social or artistic competence is relevant to such an assessment is basically a value question, not a matter for scientific analysis. Only *after* such questions have been answered for some particular assessment purpose can one sensibly begin the process of seeking evidence of effective or ineffective functioning.

Seven different qualities associated with broad patterns of effective functioning are described in Table 7.2, along with the prototypical conceptions of intelligence that correspond with each of these qualities. Although these conceptions are potentially applicable to any given content domain, they are not really content-free, since any assessment of intelligence must be anchored to some content. Rather, they provide a framework for assessment by defining a set of general criteria that might be used to evaluate the effectiveness of a person's functioning with respect to the identified content of interest (i.e., depending on the relevance of each criterion to the content being assessed), and by specifying where content must be filled in (i.e., one must identify in some manner the BES and BES components of interest). This implies that intelligence tests should be regarded as evolving tools that can and should be changed whenever there is a significant change in either the content that is valued for some assessment purpose, or in the knowledge gained about the nature of effective functioning with regard to such content.

Integrating conceptions of personality and intelligence

As implied in the preceding sections of this chapter, the key to integrating the fields of personality and intelligence is linking evaluations of effectiveness to the content relevant for a particular individual or group of individuals. In other words, definitions and measures of characteristics associated with effective functioning (i.e., intelli-

Table 7.2. A living systems conceptualization of the variety of meanings associated with the concept of intelligence

Qualities associated with an effective BES repertoire	Prototypical meanings of intelligence
1. Quantity of accurate, useful information represented in the BES (and associated concepts and propositions) relevant to some general set of contexts (i.e., in some "domain" of human functioning).	Breadth of knowledge in a general domain of expertise.
2. Quantity of accurate, useful information represented in the BES (and associated concepts and propositions) relevant to a relatively circumscribed set of contexts.	Depth of knowledge in an area of specialization.
3. Degree to which BES enactments (i.e., actual performances) meet objective standards representing mastery, excellence, or high levels of achievement.	Performance accomplishments in a general domain or area of specialization.
4. Degree to which BES enactments meet subjective criteria representing smooth, polished functioning (e.g., effortless, grace, elegance, etc.).	Automaticity or ease of functioning in a general domain or area of specialization.
5. Probability of successfully enacting relevant BES under highly evaluative, arousing, difficult, or distracting conditions.	Skilled performance under highly challenging conditions.
6. Degree to which relevant BES are rich and varied with regard to potential combinations of optional components.	"Generative flexibility"—ability to alter behavior patterns in response to varying circumstances.
7. Degree to which existing BES can be incrementally improved in rapid fashion, or readily replaced in favor of more adaptive patterns.	Speed of learning and behavior change.

gence) must be anchored to content that is meaningful for a particular individual or group of individuals given their developmental history, cultural background, social and occupational roles, and personal circumstances (i.e., personality).

In some cases, content definitions may be broadly applicable to very large groups of people. This possibility is particularly well illustrated by assessments of infant intelligence, which focus largely on markers associated with biological maturation, and by the general dimensions identified in studies of people's conceptions of intelligence and competence—dimensions such as verbal ability, practical problem-solving competence, prosocial behavior, and the like (e.g., M. Ford & Miura, 1983; Sternberg, 1985b; Sternberg, Conway, Ketron, & Benstein, 1981). However, even in these cases effectiveness criteria must still be operationalized in terms of behavior episodes representing personally or socially relevant content. For example, the kinds of practical problems relevant to an assessment of practical problem-solving ability may vary considerably across socioeconomic, cultural, ethnic, or occupational groups. Moreover, assessments of intelligence that are limited to a few general categories may not adequately or fully represent the range of content relevant for a particular individual or group of individuals (e.g., individuals who have a rich, varied,

or unique hierarchy of personal goals). Thus, to be maximally useful and informative, assessments of intelligence and personality must be tied together at the level of the individual person or at the level of a relatively homogeneous group of people. This is an increasingly important principle to consider as the range of goals and contexts in which target individuals can invest themselves becomes more variable and complex (e.g., as a result of increased capabilities for self-direction, increased opportunities for autonomous decision making, or increased variability produced by social-economic-political circumstances).

In short, although some of the content relevant for evaluations of effective functioning might be defined by relatively fixed biological parameters or by widely shared cultural values, much of that content is defined by the individual's personal choices and local circumstances (i.e., by the goals and contexts that anchor their most important, recurring BES). Thus, intelligence must be defined, at least in part, on the person's own terms if it is to be a meaningful concept.

This way of conceptualizing intelligence is consistent with the move toward a "multiple intelligences" approach (Gardner, 1983), but expands the menu of possibilities to include virtually any domain or category of effective functioning that a person or social group might value, at levels of abstraction ranging from broad, general expertise across a diversity of contexts to highly focused accomplishments in a narrow range of contexts. Thus, the "fixed" part of the LSF approach to integrating personality and intelligence is not a set of content categories or dimensions such as verbal ability, visual-spatial ability, etc., but rather the set of seven generic criteria for describing an effectively functioning set of behavior episode schemata (see Table 7.2). In other words, this approach weds an idiographic conceptualization of personality with a nomothetic understanding of intelligence. It also suggests that descriptions of a person's functioning that do not incorporate both of these elements are likely to be somewhat impoverished.

Operationalizing the LSF approach to integrating personality and intelligence

The conceptual framework presented in this chapter suggests a basic strategy for integrating assessments of personality and intelligence. Specifically, to operationalize this approach one would need to cross an idiographically defined set of (one or more) content categories with a nomothetically defined set of (one or more) criteria representing some characteristic associated with an effectively functioning BES repertoire. The simplest version of such an assessment would involve the measurement of one aspect of effective functioning in one content domain (e.g., breadth of verbal knowledge as represented by a vocabulary test, mechanical aptitude as represented by proficiency in constructing or repairing machinery, or artistic creativity as represented by flexibility in combining elements into new or unique patterns). A somewhat broader application of this strategy might involve assessing multiple content dimensions on a particular criterion of effective functioning (e.g., depth of knowledge in various aca-

demic specialty areas as represented by an achievement-test battery; effectiveness in a professional job as represented by a portfolio of performance accomplishments).

The unique contributions of the LSF approach to the integrated assessment of personality and intelligence are more clearly revealed, however, by considering examples in which multiple criteria representing different aspects of effective functioning are simultaneously applied to a particular content domain. Four such examples are outlined in Table 7.3. In each example, a single content category of particular relevance to a group of people with similar BES is crossed with the seven characteristics associated with effective functioning described earlier in Table 7.2.

Although these examples of highly intelligent functioning with respect to a particular role or activity reveal some of the descriptive richness afforded by the LSF approach to integrating personality and intelligence, the ultimate application of this approach is designed to yield an even more informative result. In such an application, one would cross the seven evaluative dimensions representing the concept of intelligence with multiple content dimensions representing an idiographically defined set of personally or socially valued roles and activities. Table 7.4 displays an assessment format designed to serve this purpose, called the Assessment of Personal Intelligence (or API for short).

The API makes explicit the fact that it is impossible to conduct a meaningful assessment of intelligence without first specifying the precise content dimensions that are relevant for a particular individual (or set of similar individuals). Moreover, it highlights the fact that a variety of alternative criteria representing somewhat different meanings of intelligence can be used to define effective functioning. As a consequence of these two unique features, the API is capable of providing researchers and practitioners with an unusually relevant and revealing profile of an individual's functioning.

In an effort to further clarify this method of operationalizing the LSF approach to integrating the study of personality and intelligence, and to illustrate the potential advantages of this approach compared to traditional tests of personality and intelligence, two concrete examples of a completed Assessment of Personal Intelligence, each combining quantitative scoring with a verbal summary, are presented in Tables 7.5 and 7.6.

These examples illustrate several characteristics of a typical API. First, the focus on multiple content domains representing a diversity of valued goals and achievements affords the advantages of a "multiple intelligences" approach (Gardner, 1983), but with much greater flexibility than an approach that is limited to nomothetically defined categories of human functioning. From the perspective of the LSF, an infinite variety of content domains could, in principle, be defined, at whatever level of abstraction makes sense for the particular individual (or individuals) being assessed. In other words, by allowing content domains to be defined in terms of idiographically defined goals and achievements of particular concern to the individual and/or the contexts of the individual being assessed, it is possible to integrate the objectives of personality and intelligence assessments.

Table 7.3. Profiles of highly intelligent individuals

Criterion	Student	Counselor	Quarterback	Pianist
Breadth of knowledge in a general domain of expertise	The student knows a lot of relevant facts, concepts, or solution procedures in some academic domain or across several such domains.	The counselor has extensive knowledge about different kinds of counseling techniques and their utility for different kinds of clients and problems.	The quarterback has extensive knowledge of the game of football, the team's playbook, and when to call particular plays.	The pianist knows how to play many different songs (i.e., the pianist has a large repertoire).
Depth of knowledge in an area of specialization	The student has acquired a great deal of knowledge about a particular subject or special area of interest.	The counselor has the expertise and wisdom needed to understand a particular kind of client or problem in great detail.	The quarterback has an unusually clear and detailed understanding of how to attack a particular kind of defense (e.g., a zone defense, nickel defense, etc.).	The pianist has a repertoire that is particularly well suited for a particular audience or occasion (e.g., wedding music; children's songs).
Performance accomplishments	The student routinely performs well in classroom activities, on class assignments, and on exams.	The counselor successfully facilitates effective or improved cognitive, emotional, biological, and/or behavioral functioning in most clients.	The quarterback is able to execute plays successfully on virtually every down (within the constraints of the defense), and consistently makes key plays that help his team win games.	The pianist is able to perform songs from his or her repertoire in a technically proficient and stylistically appropriate manner.
Automaticity or ease of functioning	The student is able to complete academic tasks successfully with a minimum of effort.	The counselor is able to recognize and deal with clients' problems in a relaxed, efficient, and professional manner.	The quarterback can quickly size up a situation and decide what to do, and then implement that decision with machine-like precision or unusual grace.	The pianist is able to play with a natural, polished style that seems smooth, reliable, and relatively effortless.
Skilled performance under highly challenging conditions	The student is able to do his or her best even under difficult or highly evaluative conditions (e.g., hard or important exams; highly public performances).	The counselor is able to handle highly distressed, disorganized, or dangerous clients.	The quarterback is able to "come through in the clutch" and remain cool and in control in the face of adversity.	The pianist is able to perform at an optimal level despite the pressure of playing before a large or significant audience.
Generative flexibility	The student can generate alternative strategies or novel approaches to challenging tasks and problems.	The counselor displays ingenuity and versatility in dealing with clients' problems.	The quarterback is clever and resourceful in calling and/or executing plays.	The pianist can improvise on well-practiced routines or newly learned material in creative and interesting ways.
Speed of learning and developmental change	The student is able to learn new facts, concepts, and procedures in a rapid and enduring manner.	The counselor is readily able to incorporate new concepts, techniques, and approaches into his or her work.	The quarterback can quickly learn and master a new play, formation, or game plan.	The pianist can quickly learn a new song or new way to play an old song.

Table 7.4. The basic measurement framework for the Assessment of Personal Intelligence

Scoring instructions	Relevant Goals/Content Domains						
	1	2	3	4	5	6	7
Quantitative Assessment (optional). If this option is used, scores should represent levels of knowledge, mastery, performance, or success relative to domain-specific exemplary standards. (These standards should be defined in terms of developmentally appropriate, real-life human achievements rather than hypothetical ideals representing "perfection.")							
Little or no expertise or competence	Modest level of expertise or competence relative to an exemplary standard	High level of expertise or competence but clearly less than an exemplary standard	Approaching or meeting an exemplary standard				
Verbal Assessment (required). In this option, levels of knowledge, mastery, performance, or success are summarized in words that are clearly anchored to particular achievements or to a developmentally appropriate exemplary standard.							
Dimensions of intelligence	Domain one	Domain two	Domain three	Domain four	Domain five		
Breadth of general knowledge base							
Depth of knowledge in specialized area							
Performance accomplishments							
Automaticity or ease of functioning							
Skilled performance under challenge							
Generative flexibility							
Speed of learning and behavior change							

Second, by restricting content domains to a relatively small number of goal pursuits representing a person's most important "core goals" (Nichols, 1990, 1991), "current concerns" (Klinger, 1977, 1987), "personal strivings" (Emmons, 1986, 1989), "personal projects" (Little, 1983, 1989), or "life tasks" (Cantor & Fleeson, 1991; Cantor & Kihlstrom, 1987; Cantor & Langston, 1989), it is possible to summarize that individual's personality and intelligence in a way that is broad in scope but reasonably concise. One might also try to increase the depth and precision of such an assessment by defining a set of relevant subgoals (i.e., areas of specialization) for some content domains. For example, the goal of "academic success" might be defined in terms of subdomains representing traditional subject matter categories. "Golfing

Table 7.5. Completed Assessment of Personal Intelligence for "Jason," a 15-year-old male high school student

Dimensions of intelligence	Relevant Goals/Content Domains				
	Academic Success	Social life/dating	Golfing mastery	Video game expertise	Artistic competence
Breadth of general knowledge base	6	3	5	7	3
Depth of knowledge in specialized area	6	2	6	7	3
Performance accomplishments	6	2	4	7	4
Automaticity or ease of functioning	7	1	4	7	4
Skilled performance under challenge	5	1	3	7	3
Generative flexibility	6	1	5	7	2
Speed of learning and behavior change	7	4	4	7	3
Verbal Summary					

With regard to academics, Jason is an extremely bright youngster in the sense of breadth and depth of knowledge across academic subjects (compared to others at his level of development). He routinely earns high grades in all academic subjects with little effort because he learns so quickly and easily. His performance is less remarkable under conditions requiring extra effort or performance under pressure, but still above average compared to his peers.

Jason is very interested in dating and improving his social reputation, but is very shy around girls, especially those who are particularly popular or attractive. Consequently, he has learned a fair amount about this aspect of social competence but has almost no direct experience relevant to this domain. Jason took up golf two years ago and has developed an intense passion for the game. He reads a lot about the game and is particularly knowledgeable about chipping and putting. His handicap has been gradually dropping, and is now at 15. He has a somewhat awkward swing, and performs erratically under pressure, but often exceeds observers' expectations due to his resourcefulness around the greens.

A major activity among Jason's male peers is playing video games. He has fully mastered many games, and is particularly skilled at games requiring intellectual skill and creativity along with excellent perceptual-motor skills. In fact, he is so experienced and clever in this domain that it is difficult to find games that provide him with a meaningful challenge.

From an early age, Jason has had a strong interest in art and continues to be interested in occupations that require artistic competence. Despite very little instruction or exposure to high quality artwork, he has produced impressive artwork on a number of occasions. However, the thematic and stylistic aspects of these products have been rather stereotyped and limited, and his skills have not progressed much in the last few years.

Table 7.6. Completed Assessment of Personal Intelligence for "Sharon," a 29-year-old female stockbroker

Dimensions of intelligence	Relevant goals/content domains				
	Financial market expertise	Close family relations	Maternal competence	Astute shopping	Piano playing skill
Breadth of general knowledge base	5	5	6	7	4
Depth of knowledge in specialized area	7	5	4	6	6
Performance accomplishments	6	3	4	6	5
Automaticity or ease of functioning	4	4	2	7	4
Skilled performance under challenge	6	3	3	7	5
Generative flexibility	4	5	3	7	3
Speed of learning and behavior change	4	4	3	6	3
	Verbal summary				

With regard to her chosen occupation, Sharon has performed very well for her clients by developing not only general expertise about the financial world, but also a very strong understanding of international markets. She is not particularly clever or insightful in this regard, but simply works very hard to obtain and analyze information that others choose to ignore.

Sharon comes from a very close-knit but troubled family, and invests a great deal of time and effort trying to maintain good relations among family members. As a Human Development major in college, she learned a fair amount about the dynamics of family relationships, and has learned to be persistent and resourceful in trying to manage family conflicts. However, she has had only limited success in helping her family alter their dysfunctional patterns of relating to one another.

Three months ago Sharon had her first child, a boy. She read everything she could find on the topic of how to be a good mother, but admits that she does not yet fully appreciate the meaning and significance of much of that information. Although things seem to be going reasonably well in terms of the baby's development, Sharon is clearly not yet comfortable in her role as a mother, and feels that she is just beginning to learn how to respond appropriately to her baby's needs.

In part because of her financial savvy, but largely due to years of experience in malls, department stores, and specialty stores, Sharon has become an expert shopper with detailed knowledge of formal and informal store policies and how to find the highest value merchandise for the least amount of money. Although she sometimes settles for a less than ideal price due to time and transportation constraints, she is also a remarkably efficient and creative shopper who can quickly locate and purchase desired goods and services from among hundreds of stores and catalogs to which she has access.

Sharon has studied classical piano for 17 years and has developed considerable technical proficiency, as evidenced by her successful participation in numerous recitals and concerts. However, her style is somewhat mechanical and it takes her many months to master each new piece of music. Nevertheless, she enjoys performing and is very concerned that she will be unable to continue investing time in this domain of expertise.

mastery" might be subdivided into the various kinds of shots required to play well (e.g., wood play, long iron play, chipping and putting, sand play, etc.). Similarly, the goal of "piano proficiency" might be assessed with regard to different categories of music (e.g., classical, pop, religious music, etc.), or even with regard to specific pieces that are currently of primary interest or concern (e.g., a Beethoven sonata, Billy Joel's greatest hits, or piano accompaniments for an upcoming concert).

Third, the data in Tables 7.5 and 7.6 clearly convey both the interrelatedness and distinctiveness of different dimensions of intelligence. That is, because each dimension is intended to reflect different aspects of the same general phenomenon (i.e., the effectiveness of a person's functioning with regard to some set of stable, recurring BES and BES components), one would usually not expect a broad range of scores within a particular content category. On the other hand, even relatively small variations among these scores can convey meaningful information about the idiosyncratic character of the person's intelligence within a particular domain.

Finally, the verbal information provided for each domain in the person's API addresses the problem of how to translate numerical information of the kind yielded by most personality and intelligence tests into a meaningful understanding of the content and effectiveness of an individual's functioning. Although numbers anchored by clear content labels and specific effectiveness criteria can efficiently summarize a great deal of information, verbal interpretative material can provide additional detail about relevant goals and contexts and help bring these numbers "to life."

Limitations of the Assessment of Personal Intelligence

It is important to note that there are several potential obstacles and limitations inherent in the ISF approach to the integrated assessment of personality and intelligence that must be carefully considered before attempting to apply this approach. First, the API is simply a framework for assessment. It does not provide or even specify the kinds of measuring tools that one will ultimately need to use to fill in the cells of the API. That is intentional, of course, since it is impossible to specify in advance the precise measurement strategies (e.g., self-ratings, observer ratings, interviews, paper-and-pencil tests, performance assessments, etc.) needed to conduct a reliable and valid assessment of a particular content domain for an individual of a given development level.

Second, it is impossible to conduct an "assessment of personal intelligence" without first carefully defining the particular content domains that should be involved in such an assessment. This itself may be a complex measurement problem—certainly more complex than simply accepting the (usually implicit) definitions of valued content represented in most intelligence measures. At a minimum one must consciously consider whether an available assessment "makes sense" given the personal goals and circumstances of the person being assessed. Often, however, it may require a separate, initial assessment of personally, culturally, and/or developmentally salient goals and activities like those described earlier in this chapter.

Related to this limitation is the possible incongruity of the API approach with the goal of conducting a standardized assessment of intelligence. Although one might be able to rely on a standardized set of content categories up through the early school-aged years based on normative developmental criteria (e.g., Waters & Sroufe, 1983), it is difficult to justify a nomothetic approach beyond this age range given the increasingly diverse range of goals and contexts represented in the BES repertoire of older children, adolescents, and adults. On the other hand, because the criteria for defining different aspects of intelligence are fixed in the API, it may be possible to conduct standardized assessments within domains, assuming that a common "exemplary standard" can be defined against which to anchor the measurement process.

This assumption points out another potential limitation of the API, namely, the problem of identifying appropriate assessment standards. This problem is not unique to the API; all intelligence tests must define such standards (e.g., through item selection and/or norming procedures). However, because it will often be the case that different sets of standards will be needed for different individuals (i.e., because of the diversity of content domains represented in their assessments), this may be a particularly challenging problem in efforts to apply an idiographic approach such as that represented by the API to the assessment of intelligence.

Summary

In this chapter a conceptual and methodological approach to the integrated study and assessment of personality and intelligence was described. This approach is based on D. Ford's Living Systems Framework, a comprehensive theory of human functioning and development, and M. Ford's conceptualization of competence and intelligence (D. Ford, 1987; D. Ford & M. Ford, 1987; M. Ford, 1985, 1986a, 1986b, 1992; M. Ford & Tisak, 1983). The basic premise of this approach is that, by understanding human functioning in terms of individually constructed behavior patterns anchored by goals and contexts, it is possible to conceptualize personality and intelligence in a way that makes it possible to wed these concepts together in a productive way. Specifically, the LSF enables one to derive a set of criteria for evaluating the effectiveness of a person's functioning, and suggests a way of linking these criteria to content domains that have real-world significance for the individual (as exemplified by the Assessment of Personal Intelligence). Recent advances in the idiographic assessment of goal content (e.g., Cantor & Fleeson, 1991; Cantor & Langston, 1989; Emmons, 1986, 1989; Little, 1983, 1989; Markus & Nurius, 1986; Markus & Ruwolo, 1989; Nichols, 1990, 1991) provide further evidence of the feasibility and utility of this approach to integrating personality and intelligence.

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