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Social-Cognitive Theory of Personality Assessment

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This article presents a social-cognitive theory of personality assessment. We articulate the implications of social–cognitive theories of personality for the question of what constitutes an assessment of personality structure and behavioral dispositions. The theory consists of 5 social-cognitive principles of assessment. Personality assessments should (a) distinguish the task of assessing internal personality structures and dynamics from that of assessing overt behavioral tendencies, (b) attend to personality systems that function as personal determinants of action, (c) treat measures of separate psychological and physiological systems as conceptually distinct, (d) employ assessments that are sensitive to the unique qualities of the individual, and (e) assess persons in context. These principles are illustrated through a review of recent research. Social-cognitive theory is distinguished from an alternative theory of personality structure and assessment, 5-factor theory, by articulating the strategies of scientific explanation, conceptions of personality structure and dispositions, and the assessment practices that differentiate the approaches.

What is "personality assessment"? How should one assess the psychological qualities that constitute the core of personality?

Our goal in this article is to organize into a coherent theoretical framework the answers to these questions that derive from social-cognitive theory (see Cervone & Shoda, 1999b). Although others have addressed the implications of social-cognitive theory for personality assessment either directly (Bandura, 1997; Cantor & Kihlstrom, 1987, 1989) or indirectly in the course of conducting empirical research, broad statements of the implications of social-cognitive theory for personality assessment are generally lacking. Indeed, some have seen this shortcoming as the "Achilles heel" (Emmons & King, 1989, p. 112) of the social-cognitive approach to personality (also see Carver & Scheier, 1989).

In advancing a social-cognitive theory of personality assessment, this article is guided by the following premise. To answer questions about personality assessment, one needs a personality theory. Theory inevitably guides judgments about what one should assess and how one should assess it. Theoretical considerations thus dictate answers to the question of what qualifies as a personality assessment. If one's theory says that personality functioning rests on unconscious structures and the dynamics of mental energy (Freud, 1923/1961), then personality assessments must target these structures and dynamics in a manner that is sensitive to material that lies outside of consciousness. If one's theory says that personality functioning reflects the personal narratives that individuals construct over the course of life (McAdams, 1996b; Tomkins, 1979), then the only procedures that qualify as comprehensive personality assessments are ones that assess life stories. A theory of personality, then, contains not only a theory of persons but (at least implicitly) a theory of personality assessment, that is, a set of beliefs about the internal psychological structures and overt behav-

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ioral tendencies that must be measured in an assessment of personality and the procedures that are required to measure them. To a greater degree than is commonly acknowledged, personality theory and personality assessment are intertwined (Caprara & Cervone, in press-b).[1]

To begin, we outline the main features of social-cognitive theory. In so doing, we draw heavily on previous work in the social-cognitive tradition (reviewed in Cervone & Shoda, 1999b); we are guided in particular by the social-cognitive theory of Bandura (1986, 1999) and also the cognitive-affective system theory of Mischel and Shoda (1995). Our goal is to show how social-cognitive approaches yield a coherent view of personality assessment that differs significantly from alternative perspectives in the field. To fully articulate this point, we contrast social-cognitive theory with an alternative perspective, namely, that of the five-factor theory (McCrae & Costa, 1999); we consider five-factor theory because of its current prominence and because five-factor theorists themselves judge that relating trait and social-cognitive approaches is "one of the major tasks of a new generation of personality theories" (McCrae & Costa, 1996, p. 59). We then outline five principles that constitute a social-cognitive theory of personality assessment. We illustrate these principles by reporting the procedures and findings of three recent research programs that show how the principles can be put into practice.

Our goal is to outline general principles of assessment rather than to specify particular methods designed to solve specific assessment problems. We hope that an outline of theoretical principles will serve as a useful guide to future applications; personality assessment surely is a domain in which, as the timeworn phrase instructs, there is nothing more practical than a good theory. The research that we review and cite provides numerous examples of the practical application of the general principles.

Social-Cognitive Theory of Personality

Social-cognitive theories of personality have three defining features. The first is the principle of reciprocal interactionism, or "reciprocal determinism" (Bandura, 1978). Persons and social settings are viewed as reciprocally interacting systems. Sociocultural environments contribute to the development of personality structures. Personality factors, in turn, partly determine which environments people experience and how they interpret the sociocultural settings they encounter.

Although the study of reciprocal influence processes is defining of social-cognitive theory, it is not unique to it. Numerous theories of personality development and functioning recognize that individuals develop through reciprocal person–situation interactions in which people agentically contribute to their development (e.g., Baltes, Lindenberger, & Staudinger, 1998; Lerner & Busch-Rossnagel, 1981; Magnusson & Stattin, 1998; Snyder, 1981; Valsiner, 1998). Indeed, Lewontin (2000) has compellingly argued that reciprocal transactions between organisms and the environment are a basic feature of biological life.

The second defining feature of social-cognitive theory is the units of analysis through which it conceptualizes personality functioning and differences among individuals. Personality is understood by reference to basic cognitive and affective structures and processes. These personality variables have social foundations (Baltes & Staudinger, 1996; Bandura, 1986; Levine, Resnick, & Higgins, 1993), that is, they develop through experiences with one's sociocultural environment. They thus are labeled *social*-cognitive. Social-cognitive theory differentiates among a number of distinct cognitive capacities that contribute to personality functioning (Bandura, 1986). These include cognitive mechanisms that underlie skills and social competencies, knowledge structures through which people interpret or "encode" situations, self-reflective processes through which people develop beliefs about themselves and their relation to the social environment, and self-regulatory processes through which people establish personal goals and standards for performance and motivate themselves to reach desired ends (see Bandura, 1986, 1999; Caprara & Cervone, 2000; Cervone & Williams, 1992; Mischel, 1973; Mischel & Shoda, 1995, 1998). Although these are cognitive mechanisms, the social-cognitive approach is not a "cold" cognitive theory. Social-cognitivists recognize that cognitive and affective processes are closely linked and that a central feature of personality functioning is the deployment of cognitive strategies to regulate affective states (e.g., Metcalfe & Mischel, 1999).

In differentiating among the psychological mechanisms that constitute the basic units of analysis of social-cognitive theory, we find it useful to distinguish between knowledge and appraisal processes (Lazarus, 1991; Smith & Lazarus, 1990). *Appraisals* are evaluations of a particular encounter or type of encounter. *Knowledge* refers to general beliefs about personal characteristics or characteristics of the environment (Lazarus, 1991). Appraisals may directly regulate experience and action in any given setting. People's appraisals of a

[1]One illustration of the historical separation of personality theory and assessment is that the terms *assessment* and *testing* do not appear as index items in Hall and Lindzey's (1957) classic textbook of personality theories, and the large majority of the theorists discussed by Hall and Lindzey receive no mention in Cronbach's (1970) classic textbook of psychological testing.

given encounter, however, may be substantially shaped by the knowledge that they bring into that setting. Salient knowledge structures, then, may contribute to stability and coherence in personality functioning by creating coherent patterns of appraisal (Cervone, 1997). The distinction between knowledge and appraisal processes is illustrated by the research programs discussed later.

A third feature of social-cognitive theory is that it treats personality as a complex, dynamic system (Cervone, 1997, 1999; Cervone & Shoda, 1999c). Personality is a system of dynamically interacting social-cognitive and affective processes, as Mischel and Shoda (1995, 1998) have emphasized. As with any such system (see, e.g., Barton, 1994; Fogel, Lyra, & Valsiner, 1997; Nowak & Vallacher, 1998; Waldrop, 1992), personality can only be understood by examining both its basic elements and the interconnections among these elements. The personality psychologist must address the distinctive interconnection of cognitive and affective processes that contributes to personal coherence and uniqueness (Cervone, 1997; Mischel & Shoda, 1995, 1998). By combining this systems view with social-cognitive theory's focus on self-referential thought and the human capacity for self-regulation, personality can be viewed as a complex "self system" (Bandura, 1999, p. 229) through which individuals contribute to their experiences, actions, and development.

Three aspects of a complex systems view are of particular note. The first is that complex systems tend to self-organize (e.g., Bak & Chen, 1991; Nowak & Vallacher, 1998). Interactions among multiple elements of the system give rise to stable patterns of organization in the system as a whole. The system's organization, then, does not result from the influence of a high-level organizer. Development is not directed by endogenous structures that create immutable system tendencies (cf. McCrae & Costa, 1996). Instead, "processes develop over time into more complex and stable organizations" (Caprara, 1996, p. 18). These stable patterns arise "without prespecification" (Lewis, 1997, p. 193). The second point is that a complex system's internal organization can give rise to coherent, stable patterns in its overt behavior. Coherent behavioral tendencies are understood as emergent properties of interactions among the basic elements of the system. An important aspect of this explanation of the behavior of a complex system is that no individual, isolated structure in the system creates or directly corresponds to a global behavioral tendency of the system as a whole. Instead, global system properties are explained by reference to interactions among multiple underlying mechanisms. For example, the behavior of a macroeconomic system that acts as if guided by an "invisible hand" is understood by reference to dynamic interactions among multiple market forces, no one of which is independently responsible for, or directly corresponds to, the system's overall pattern of economic stability or change (Arthur, 1990). The third point is that, in complex systems, self-organization can take on any of a large variety of final forms. Systems take on enduring patterns of organization that are unique. "Developmental self-organization," then, "[tends] to dig its own idiosyncratic trenches" (Lewis, 1997, p. 196).

In this systems view of personality, the principle of reciprocal interaction can be extended from the analysis of person–situation interactions to the study of interactions among personality variables. Distinct personality processes reciprocally influence one another in the course of development and functioning. This point is illustrated, for example, in the study of affect and self-regulatory processes. Personal standards for performance partly determine people's affective reactions to performance outcomes, and affective states influence the standards for performance that people set (Cervone, Kopp, Schaumann, & Scott, 1994; Scott & Cervone, in press; Tillema, Cervone, & Scott, in press).

These three defining features of social-cognitive theory differ from the theoretical principles found in some alternative perspectives in personality psychology. We consider one such alternative now, namely, that of the five-factor theory of personality structure (McCrae & Costa, 1996). Contrasting the social-cognitive and five-factor theories serves to highlight the unique features of the social-cognitive theory of personality assessment that we present in the following section.

A Contrasting Perspective: Five-Factor Theory

Social-cognitive theory contrasts with the trait-theoretical perspective known as five-factor theory (McCrae & Costa, 1996, 1999). Five-factor theory is the outgrowth of a remarkably consistent set of empirical findings. Across different assessment methods, languages, and cultures, interindividual differences in global dispositional tendencies can be well described through the use of five linear dimensions (McCrae & Costa, 1999). Similar interindividual-difference dimensions are found whether one analyzes terms in the natural language (Goldberg, 1993) or items in psychologists' personality questionnaires (McCrae & Costa, 1990).

These findings have spurred the development of a five-factor theory that represents an effort to move from a description of individual differences to an explanation of the personality functioning of the individual (McCrae & Costa, 1996, 1999). Five-factor theory posits that the five dimensions found in analyses of

interindividual differences in the population correspond to universal psychological tendencies that are possessed by each individual person. Each of the five factors is said to give rise to an average, overall dispositional tendency in the individual's thoughts, feelings, and actions. The five factors are said to be biologically based, to be unaffected by the environment, and thus to be unchanging across the span of adult life (McCrae & Costa, 1996). The factors constitute "the core of personality" (McCrae & Costa, 1996, p. 69) and thus "define the individual's potential and direction" (p. 66).

Five-Factor Assessment: Tapping Global, Phenotypic Individual Differences

This conception of personality structure brings with it a conception of personality assessment. To assess personality in this view is to determine an individual's standing on the five factors, that is, on each of five individual-difference dimensions (Costa & McCrae, 1992; Goldberg, 1999; Hendriks, Hofstee, & De Raad, 1999). Although additional information (e.g., the person's standing on lower level "facets" of each factor; Costa & McCrae, 1992; Hendriks et al., 1999) is also important to assessment, measuring the five factors is the core assessment task.

Five-factor theory (McCrae & Costa, 1996) and the related "big five" (Goldberg, 1993) approach to individual differences and assessment embody four assessment practices that contrast with the social-cognitive theory we present. We spell out these practices here and explain the contrast with social-cognitive theory in the next section.

First, five-factor assessments tap overt, surface-level psychological tendencies. Assessments target each of a series of tendencies in experience, thought, and action. Although theorists may infer that these dispositional tendencies correspond also to internal psychological structures, the measures themselves are self-reports of overt behavioral tendencies and preferences.[2]

Second, the surface-level tendencies of interest are average, mean-level tendencies. Psychological tendencies are averaged across time and context to yield a global assessment of a person's average disposition to perform one versus another class of action. In practice, self-reports that pertain to diverse aspects of social life are averaged together to obtain a global, context-free index of the individual's average dispositional tendencies; for example, self-reports of one's (a) preference for a vacation in Las Vegas and (b) social reputation for interpersonal warmth are aggregated in a global index of extraversion (Costa & McCrae, 1992). Trait theorists and assessors clearly recognize that people's experiences may vary significantly across contexts. Nonetheless, the central elements of personality assessment are measures of global, decontextualized psychological qualities, and individuals are characterized by their average tendency to exhibit each of the qualities.

Third, the personality of individuals is assessed via interindividual-difference constructs. Factors that are identified in analyses of individual differences in the population at large are used to characterize the psychological makeup of each and every individual. A number of writers have commented on the many assumptions that are entailed when one uses population-level constructs to characterize individual persons (e.g., Lamiell, 1997; Rorer, 1990).[3]

Finally, core personal qualities are treated as functionally independent. One assesses each of a series of isolated personality variables without attending to the potential interconnections among them. Five-factor assessments indicate whether people are neurotic and conscientious, but not whether they are conscientious because they are neurotic or neurotic because they are conscientious.

The Difference Between Five-Factor Theory and Social-Cognitive Theory: Alternative Strategies of Explanation

A question that is critical to our presentation of a social-cognitive theory of personality assessment is that of the relation between social-cognitive and five-factor theory. This question is key for the following reason. If five-factor and social-cognitive

[2]Theorists differ in whether they treat self-reports of dispositional tendencies as merely phenotypic properties (Goldberg, 1993) or also as inferred structures with causal force (McCrae & Costa, 1996; see Goldberg & Saucier, 1995; John & Robbins, 1993; Saucier & Goldberg, 1996).

[3]The distinction between population-level and individual-level analyses (also see Lamiell, 1997; Rorer, 1990) overlaps with, yet is not identical to, well-known distinctions between idiographic versus nomothetic methods (Allport, 1937) and between person-centered versus variable-centered strategies (Magnusson, 1988). The traditional five-factor strategy is a nomothetic, variable-centered approach. Nonetheless, it is possible to employ five-factor constructs in a person-centered manner that captures some of the idiosyncracies of individuals. For example, one might seek to identify subsets of the population who share a profile on a set of factors (John, Pals, & Westenberg, 1998; Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996). Although such approaches deviate from standard nomothetic variable-centered procedures, they do still rest on the assumption we outline here, in that individual persons are described according to a set of psychological constructs that are identified in the analysis of individual differences in the population.

theories of personality were closely related and could easily be integrated, then there would be no need for a unique social-cognitive theory of personality assessment in the first place. Social-cognitive principles simply could be subsumed under the theoretical umbrella of five-factor theory, as McCrae and Costa (1996) have explicitly suggested. A distinct theory of personality assessment is required only if the personality theories differ fundamentally, and they do. Specifically, they differ in the strategies of scientific explanation that they invoke to explain personality functioning (Cervone, 1997, 1999). These differences can be articulated through either of two conceptual frameworks, one of which comes from Lewin (1935), the other from the contemporary philosophy of science.

Aristotelian Versus Galilean Explanation

Lewin (1935) distinguished two types of explanatory concepts: Aristotelian and Galilean. Aristotelian explanatory strategies consider "abstractly defined classes as the essential nature of [an] object and hence as the explanation of its behavior" (Lewin, p. 15). The essential qualities that serve to explain behavior in Aristotelian strategies have a number of distinguishing properties (Lewin): (a) They correspond to statistical averages. Objects are classified according to what they generally are disposed to do, with idiosyncratic variations in particular instances being ignored; (b) They are defined irrespective of situations. An object's essential nature does not vary across contexts; (c) They are enduring. The essential nature of an object does not change over time.

In identifying structures of personality that explain behavior, five-factor theory is prototypically Aristotelian.[4] Explanation is in terms of hypothetical constructs that are essential qualities of an individual that correspond to his or her overall, average tendency to perform given types of action. As is prototypical of an Aristotelian approach, the five personality factors are said to be unaffected by the environment and thus to be unchanging across context and across time (Costa & McCrae, 1994; McCrae & Costa, 1996). Although the five factors are identified through modern statistical procedures, this does not change the fact that, if invoked as explanatory constructs, they reflect ancient Aristotelian reasoning; as Lewin (1935) noted, "the efforts of psychology…toward exactness and precision have been in the direction of refinement and extension of statistical methods…. [This] has not changed the underlying concepts in the slightest: they are still thoroughly Aristotelian" (p. 17).

Lewin (1935) called on psychologists to do what physicists had done centuries before: Abandon Aristotelian essentialism and embrace Galilean explanation. Here, one explains phenomena by specifying the dynamic processes through which they come about. Explanations do not reference merely the properties of the object whose action is being explained. Instead, actions are explained by reference to interacting characteristics of the object and of the environmental context in which action occurs. A particularly important feature of Galilean scientific explanation is that the causal constructs that are invoked do not correspond to average tendencies or frequencies in behavior. In modern physics, "the law of falling bodies…does not assert that bodies very frequently fall downward" (Lewin, 1935, p. 12). Instead, an object's typical movements as well as idiosyncratic patterns of action are explained in terms of a system of interacting forces, no one of which directly corresponds to an average dispositional tendency.

In these regards, social-cognitive theory is prototypically Galilean. The theoretical effort is to explain human action in terms of a system of interacting personality qualities that function in reciprocal interaction with the environment (Bandura, 1986). These personal qualities are not static, essential qualities; rather, they are psychological features that develop dynamically over time, with distinct processes gradually developing into coherent psychological systems (Caprara, 1996). In social-cognitive explanation, individual theoretical constructs do not refer to average dispositional tendencies. Instead, a dynamic system of cognitive and affective processes—no one of which corresponds to a mean dispositional tendency—gives rise to both average tendencies and potentially idiosyncratic variations in response (Cervone, 1997; Shoda & Mischel, 1998).

Top-Down Versus Bottom-Up Strategies of Scientific Explanation

A related distinction is found in the contemporary philosophy of science, in which writers distinguish between top-down and bottom-up strategies of explanation (Kitcher, 1985; Salmon, 1989; Wylie, 1995). In the philosophical literature on scientific explanation, the term *top-down* refers to explanatory strategies in which one formulates a simple set of overarching principles that serve the purpose of organizing information about the world (Kitcher, 1985).[5] Particular objects or

[4]McAdams (1996a) also noted that the five-factor model embraces the explanatory logic of Aristotelian physics.

[5]All words are open to multiple meanings, and *top-down* and *bottom-up* are no exception. In the philosophy of science, the terms are used specifically to signify alternative strategies of scientific

facts are explained by fitting them into the overarching framework; the individual object, in other words, is viewed as a low-level example of an abstract, high-level principle. A defining feature of a top-down approach is that investigators might formulate an explanatory system while having little or no knowledge of underlying causal mechanisms; even without this knowledge, the top-down scheme can explain events by subsuming them "under some kind of lawful regularity" (Salmon, 1989, p. 128).

In contrast, philosophers use the term *bottom-up* explanatory strategies to refer to strategies in which explanation is in terms of well-specified causal processes. Bottom-up approaches seek to uncover "the underlying mechanisms…that produce the phenomena we want to explain" (Salmon, 1989, p. 134). The goal is not to formulate overarching principles that correspond to average or recurring trends in data, but to identify specific underlying mechanisms and to show how they actually come into play for particular individuals in particular instances. A defining feature of bottom-up causal analyses is that they are designed to account not only for average behavioral tendencies, but for individual instances that may violate statistical norms (Salmon, 1989).

In personality psychology, the five-factor approach to explanation (McCrae & Costa, 1995) is a prototypic top-down strategy. The personality functioning of the individual is explained by fitting him or her into a system of high-level personality variables. The person's location in the system explains his or her global, average tendency to display actions associated with each of the personality factors. As is typical of top-down explanation, these five-factor explanations can be formulated in ignorance of the causal processes underlying the explanatory constructs; as John (1990) explained, even after decades of progress in specifying a five-factor model, the "structures and processes underlying [the five factors] remain to be explicated" (p. 95). In contrast, social-cognitive theory represents a bottom-up approach to scientific explanation in personality psychology, as we and others have noted (Cervone, 1997, 1999; Shadel, Niaura, & Abrams, 2000; Zelli & Dodge, 1999). In social-cognitive theory, individual behavior is not explained by reference to high-level dispositional variables, but in terms of a complex system of underlying psychological mechanisms. As is typical of bottom-up explanation, social-cognitive theory strives to explain not only average tendencies in behavior, but idiosyncratic patterns of action. Social-cognitive theory can be understood as part of a broader recent call in personality psychology for bottom-up approaches that seek underlying psychological mechanisms that may not necessarily correspond in a direct way to high-level individual-difference constructs (Hettema, 2000; also see Kagan, 1994).

Structures, Dispositions, and Context

Different strategies of explanation—whether construed in Aristotelian/Galilean or top-down/bottom-up terms—have profoundly different implications for how one construes personality structure and personality dispositions, and thus for how one goes about assessing structural and dispositional tendencies. Differences are seen in three domains: (a) how one conceptualizes the relation between personality *structure* (psychological systems that are part of the person) and personality *dispositions* (things that people tend to do), (b) the nature of the behavioral dispositions that are construed as important indicators of an individual's personality system, and (c) how one weighs the role of situational context in personality assessment.

Internal structures and overt tendencies. In an Aristotelian, top-down approach such as five-factor theory, the internal structures of personality correspond to mean dispositional tendencies in overt behavior. Traits are "dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions…[and] also…a property of an individual that accounts for his or her placement along this trait dimension" (McCrae & Costa, 1995, p. 235). This type of theorizing, in which a given theoretical construct refers simultaneously to an internal psychological structure and to a corresponding overt behavioral tendency, has a critical implication for psychological assessment. It implies that assessing internal personality structures and overt personality dispositions is the

explanation. However, there are at least two other senses in which the terms may be used, and we do not imply either meaning here: (a) within the context of information-processing models of thought, the terms may refer to theory-driven versus stimulus-driven information processing; (b) in an analysis of the steps through which scientific theories develop (and in questions of epistemology more generally), they may refer to the development of ideas via conceptual reasoning versus empirical observation. If the terms are used in either of these latter two senses, there is an interplay between top-down and bottom-up processes; theory informs observation and vice versa. However, the philosophical literature we note is a literature about explanation; once one has developed a theory, whether or not the theory has anything to do with information-processing models of thought, a question that can be asked is "What sort of explanation does the theory provide?" Here, two explanatory forms are (a) a top-down strategy of identifying a simple, overarching system of variables that captures regularities in the phenomena observed, or (b) the bottom-up strategy of explaining phenomena in terms of an interacting system of identifiable causal elements, in which that system might be capable of capturing both regularities and idiosyncratic instances.

same thing. One measures an individual's average behavioral tendency and interprets the measure as an index both of what the person does (an overt behavioral disposition) and what the person has (an internal psychological structure).

In a Galilean, bottom-up approach such as social-cognitive theory, the individual structures of personality do not correspond in any direct, one-to-one way with dispositional tendencies. Instead, multiple structures and processes act, in concert, to give rise to overt psychological qualities. This type of theorizing has a very different implication for assessment than does the Aristotelian approach outlined earlier. Here, the assessment of personality structure and of behavioral dispositions is not the same thing. They are different tasks entirely. To characterize personality structure, one assesses one or more internal social-cognitive processes and the interactions among them. To assess behavioral and experiential tendencies, one obtains measures of action and affect that are conceptually and procedurally distinct from indexes of internal social-cognitive structures. One then determines the degree to which the system of social-cognitive structures contributes to the behavioral outcomes. In this approach, there is no necessary expectation that any single, isolated internal structure will relate in an isomorphic, one-to-one manner with an overt behavioral quality. Instead, overt behavior may be the product of complex interactions among multiple underlying mechanisms as well as interactions between the person and the social environment.

To illustrate the social-cognitive approach, consider the logic underlying the assessment of perceived self-efficacy and the prediction of behavior from self-efficacy measures (Bandura, 1997). Self-efficacy assessments tap domain-linked beliefs in capabilities for performance. The measures, then, index an internal belief system, not an overt behavioral tendency. Although efficacy beliefs are highly consequential for human behavior, the social-cognitivist does not expect that this isolated social-cognitive mechanism will necessarily map directly onto overt tendencies in behavior. If, for example, individuals lack requisite skills, goals, or incentives, self-efficacy beliefs might be unrelated to overt levels of response. In general, self-efficacy beliefs contribute to performance as part of a complex, interactive system of self-regulatory processes and psychosocial influences (Bandura, 1997). This level of complexity does not imply that the tasks of assessment and prediction are intractable. On the contrary, investigations that tap multiple social-cognitive mechanisms, as well as the social contexts that activate them, commonly yield strong behavioral predictions (e.g., Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bandura & Cervone, 1983, 1986; Cervone, Jiwani, & Wood, 1991).

Why study only the mean? The second point concerns the dispositional qualities that are construed as important indicators of an individual's personality. In an Aristotelian approach, the only statistical parameter of interest is the mean (Lewin, 1935). Variability around the mean is irrelevant to an object's essential qualities.

In contrast, once one drops the essentialism of an Aristotelian approach, the statistical mean no longer has privileged status. Other aspects of behavior, such as variability in response, may be equally valuable indicators of differences among individuals (Mischel & Shoda, 1995). The implication for personality assessment is that, when assessing overt behavioral tendencies, there is no need to confine one's assessments to mean dispositional qualities (cf. Larsen, 1989).

Persons in context. Third, with regard to situational context, in an Aristotelian strategy of explanation a person's essential qualities are thought to be unchanging across time and place and unaffected by the environment. This belief, too, has an important implication for assessment. It implies that there is no need to attend to environmental context when assessing the core personal qualities of the individual. One merely needs to assess global tendencies, as one does in a five-factor approach.

In contrast, in a Galilean approach properties of the individual and of the environment dynamically interact. Assessment thus must attend to context. This point holds with respect to the assessment of both internal structures and overt dispositional tendencies. Psychological structures and processes may be activated or modified by aspects of the environment. Significant dispositional qualities may include systematic variations in overt patterns of response from one context to another.

These considerations make it plain that a social-cognitive theory of personality entails a theory of personality assessment that differs substantially from a view such as five-factor theory. In the following, we summarize the implications of social-cognitive theory for assessment in terms of a set of guiding assessment principles.

Social-Cognitive Principles of Personality Assessment

Social-cognitive theory has five main implications for personality assessment. One can, in other words, derive five broad principles of assessment from the social-cognitive theory of personality. These principles comprise a theory of personality assessment in that they are an organized set of postulates that address the

fundamental question of what constitutes an assessment of personality.

The principles outlined here speak to broad goals of assessment and general heuristics for attaining those goals. They do not concern specific methodological or psychometric details. Each of the assessment goals outlined here could, in principle, be attained through a variety of procedures; examples of such procedures are found in the research programs we review here and in much other work conducted within the broad social-cognitive tradition (Cervone & Shoda, 1999b).

Distinguish Unambiguously Between the Assessment of Internal Personality Structures and Dynamics and the Assessment of Overt Behavioral Tendencies

The first implication of social-cognitive theory for personality assessment is that one must distinguish unambiguously between two tasks: the assessment of internal personality structures and dynamics and the assessment of overt dispositional tendencies. In a social-cognitive theory of personality, personality structure consists of dynamically interacting cognitive and affective systems. Dispositional tendencies are emergent properties of this underlying complex system (Cervone, 1997; Shoda & Mischel, 1998). The tasks of assessing internal structure and overt behavior must be differentiated because there may be no one-to-one mapping between an element or elements of the system and its emergent dispositional qualities.

Numerous considerations indicate that an assessment of overt, surface-level dispositional tendencies cannot be equated with an assessment of underlying psychological structure. People with similar surface-level profiles may differ at the level of underlying mechanisms. A failure to exhibit conscientious behavior, for example, may arise from a variety of underlying social-cognitive dynamics: a lack of self-control skills, a lack of knowledge of local norms for conscientious behavior, or a goal of rebelling against social norms (Cervone, 1996). Conversely, people who possess similar underlying dynamics (e.g., similar beliefs, preferences, goals, or competencies) may differ behaviorally at any point in time due to their experiencing different environmental opportunities or constraints (Cervone & Rafaeli-Mor, 1999).

Much empirical work documents a lack of correspondence between surface-level profiles and underlying dynamics. Kagan's (1994, 1998) program of research on physiological mechanisms underlying children's temperament profiles revealed that two children who, on the surface, appear to be equally anxious "can belong to different groups"; they may have "different histories and [be] in possession of different physiologies" (Kagan, 1994, p. 122). Snyder and colleagues' (Clary & Snyder, 1999; Snyder & Cantor, 1998) functionalist analysis of social behavior similarly revealed that different people may engage in the same overt activities for different underlying reasons. Ethnographic research in anthropology highlighted this same point many years ago (Wellin, 1955; see Cervone & Shoda, 1999c). The fact that people may exhibit similar surface-level profiles for entirely different reasons is well established, yet its implications for the assessment of personality structure have not been fully appreciated.

Many social-cognitive research programs apply this first principle of assessment. A classic example is Mischel and colleagues' (Mischel, 1974; Mischel, Shoda, & Rodriguez, 1989) research on personality variables in self-control. In this work, investigators developed a theoretical model in which well-specified social-cognitive structures and processes were posited to contribute to overt tendencies to control oneself rather than to succumb to impulses. Assessments of internal personality structures targeted specific social-cognitive mechanisms such as metacognitive knowledge of self-control strategies (Mischel & Mischel, 1983). Assessments of overt action involved independent behavioral measures of self-control ability. Findings indicated that the personality structures (e.g., metacognitive knowledge structures) contributed to overt behavior (i.e., waiting time in the delay of gratification paradigm; Mischel et al., 1989).

This separation of dispositional qualities from the underlying systems that causally contribute to them is not at all unique to a social-cognitive theory of personality assessment. Harré (1998) made the point in a more general manner. In psychology or any science, dispositions are observable properties that must be explained by reference to specified structures and properties with causal power. The explanatory structures and the dispositional tendencies are two entirely different things. To view dispositions as explanations "is to confuse dispositions (traits) with powers and liabilities" (Harré, 1998, p. 79); "dispositions could not be unobservable, explanatory properties of anything…. [T]he only explanatory concept that could be imported to explain personal dispositions would be personal powers" (Harré, 1998, p. 79). Dispositions such as the tendency to work hard and meet obligations must be "explained by causal powers, not by more higher-order dispositions" (p. 80).

Assess Personal Determinants of Action

As a theory of personality, the social-cognitive approach highlights psychological processes through

which people influence their experiences and actions. People are seen to contribute agentically to the development of their potentials (Bandura, 1997, in press; Caprara & Cervone, 2000, in press-a). A social-cognitive theory of assessment, then, posits that a comprehensive assessment of personality must include measures of these personal determinants of action. Personality assessments must target the knowledge, beliefs, goals, and self-regulatory skills through which people contribute to their own development.

This focus on personal determinants of action highlights a limitation that is inherent in views that equate the notion of personality with a person's current dispositional tendencies. Individuals may possess personal qualities that have little impact on their current behavioral tendencies, but that contribute significantly to life outcomes over the course of time. These personal qualities may include knowledge and self-referential beliefs that contribute most strongly to personality functioning only under certain conditions, such as when people face a challenging life transition (Cantor & Kihlstrom, 1987). These personal qualities surely constitute an important aspect of the individual's personality and thus an important target of personality assessment. Nonetheless, these qualities may be overlooked if personality assessment focuses solely on the task of summarizing current dispositional tendencies.

Much work on personal determinants of action in social-cognitive theory has explored people's appraisals of their capability for performance, or *self-efficacy appraisals* (Bandura, 1977). Self-efficacy appraisals are viewed as personal determinants of action in that they partly determine whether people attempt challenging endeavors, remain calm during task performance, and persist in their efforts in the face of setbacks (reviewed in Bandura, 1997; Cervone, 2000; Cervone & Scott, 1995). Even when individuals have equivalent experiences and skills in a domain, differential self-efficacy perceptions yield differential levels of subsequent behavior (Cervone & Peake, 1986; Peake & Cervone, 1989).

Recent longitudinal research demonstrates how self-efficacy beliefs can contribute to life outcomes over the course of time (Caprara, Barbaranelli, Pastorelli, & Cervone, 2000). Adolescents' beliefs in their personal efficacy for resisting peer pressure to engage in risky social behavior predicted problem behavior and school achievement 2 years later. Most important, efficacy beliefs predicted these outcomes even after statistically controlling for initial levels of problem behavior and achievement (Caprara et al., 2000; see also Bandura et al., 1996). Individuals with higher efficacy beliefs at Time 1, then, possessed a capacity to avoid detrimental conduct and to achieve in school that was only fully evident in their behavior at Time 2. At this later point in adolescent development, peer pressure for risky behavior likely was greater than it was initially, and a resilient sense of self-efficacy for resisting such pressure was thus more important to developmental outcomes. A general implication of this work for issues of personality assessment is that assessments at Time 1 that focused merely on current dispositional tendencies would have overlooked personality factors that proved important to life outcomes over the course of development.

Keep Separate Response Systems Separate

A common practice in personality assessment is to treat measures of diverse response systems as alternative indicators of a personality construct. If one is studying anxiety, for example, self-reports of emotional states, physiological indexes of arousal, and behavioral indexes of approach versus avoidance tendencies may (if they intercorrelate significantly) be combined into an overall index of anxiety. Even if direct measures of these systems are not available, self-reports of physiological arousal, behavioral tendencies, subjective confidence, subjective emotional experience, and patterns of cognition (e.g., involving worry or confusion) may be combined into a global index of anxiety (cf. Spielberger, 1983).

Although combining measures of multiple response systems is a reasonable practice for many purposes, it does have a significant drawback. It forestalls questions about the possible functional relations among the systems. In the case of anxiety, it might be that behavioral avoidance and physiological arousal are functionally related, with arousal causally influencing performance. Alternatively, both behavior and physiological arousal may be determined primarily by the self-referential beliefs tapped by the self-reports. As Bem (1972) indicated many years ago, these and other possibilities could only be explored if "response classes [are] given independent conceptual statuses from one another and analyzed separately" (p. 54).

The social-cognitive theory of personality is centrally concerned with the functional relations among affect and physiological arousal, cognition, and action. The third principle of personality assessment in social-cognitive theory, then, is to treat separately measures of separate response systems. Rather than combining alternative indexes into a global index of a broad psychological disposition, one should treat measures of cognition, affect, and action as conceptually distinct and explore the reciprocal interactions among thoughts, feelings, and behavior.

One's choice of how to treat measures of separate response systems follows naturally from the strategy of

explanation that one embraces. An Aristotelian approach inclines one to search for the essential qualities of a person and thus to treat alternative measures as potential indicators of the essential quality. The different indicators all serve the same purpose, namely, to indicate the level of the essential quality that the individual possesses. Because they are functionally equivalent, they can be combined. In a Galilean approach, explanation is in terms of multiple interacting systems. One naturally treats measures of distinct systems separately, because this is the only way to learn how they interact. This third social-cognitive principle of assessment, then, reflects social-cognitive theory's overall approach to explanation.

Research on perceived self-efficacy and anxiety illustrates this third principle of assessment (Bandura, 1997). In self-efficacy research, measures of cognition, avoidant behavior, and anxious arousal are not treated as multiple indicators of a global construct of anxiety. Instead, measures of beliefs, action, and arousal are treated as conceptually distinct. The self-efficacy measures tap a very specific aspect of self-referential thought, namely, people's appraisals of their capabilities to enact the behaviors required to cope with prospective threats. Research then determines the ways in which these efficacy beliefs causally contribute to behavior (Bandura, Adams, & Beyer, 1977) and anxious arousal (Bandura, Reese, & Adams, 1982).

This principle of assessment is similar to a point raised by Kagan (1988), who criticized psychologists' "tendency to use the same term for…different classes of data, as if the theoretical meaning of a term was unaffected by the form of its evidence" (p. 615). The meaning of a construct depends, in part, on what it refers to (its *referential* meaning). Different operationalizations of a construct, then, change its meaning. Adapting an example from Kagan (1988), the validity of the statement "expensive harps are more beautiful than less expensive ones" may depend entirely on whether one's measure of beauty indexes the harp's appearance or its sound. Both sound and appearance can be beautiful. Further, in the world's population of harps, beauty of sound and of appearance may correlate at + .99. Nonetheless, the term *beauty* does not reference a singular construct with a singular meaning.

Employ Assessments That Are Sensitive to the Qualities of the Unique Individual

Although personality psychologists devote much effort to the assessment of individual differences, ultimately personality psychology must address the psychological qualities of the individual person. Assessing individual differences cannot substitute for assessing individuals, as many theorists have explained (e.g., Block, 1995; Lamiell, 1997; Rorer, 1990). To capture an individual's personality, one must address the question of coherent, within-person patterns among psychological variables (Magnusson, 1988; Magnusson & Stattin, 1998).

Social-cognitive theory highlights three aspects of personality functioning that require particular sensitivity to the idiosyncracy of the individual. One concerns cognitive content. Even when a given psychological function is executed through processes that are common across individuals, the psychological contents involved may be highly idiosyncratic from one individual to the next. For example, all people may assign meaning to ambiguous social events by drawing on accessible cognitive constructs, and the general principles that govern construct accessibility may be the same from one person to the next (Higgins, 1996, 1999). However, the psychological content of the constructs that come into play may vary idiosyncratically. For example, Higgins, King, & Mavin (1982) assessed personal constructs by asking people to list a maximum of 10 traits that described themselves. The clear majority of constructs elicited were mentioned by only one research participant. In general, there was "relatively little overlap in people's accessible constructs" (p. 41; also see Higgins, 1990, 1999).

A second factor concerns the situations in which any given personality variable comes into play. As we note elsewhere, even if the content of people's beliefs is similar, the situations that activate that content may differ idiosyncratically from one person to the next. This point is illustrated in research that we review in the following.

The third factor is the organization among distinct personality structures. The unique features of personality involve not only isolated psychological structures, but also the coherent interconnections among structures. Assessments must, then, be sensitive to the unique ways in which individuals associate distinct cognitive elements. Assessments of "self-with-other" representations (Ogilvie & Ashmore, 1991; Ogilvie, Fleming, & Pennell, 1998; Rosenberg, 1988) illustrate how this can be done. Investigators explored not only beliefs about the self and beliefs about significant others, but the ways beliefs about the self with others can function as coherent cognitive structures. For example, Ogilvie et al. (1998) asked people to generate sets of targets (usually significant others) that were important in their life and also sets of features (personal characteristics) that characterized themselves. Participants then indicated which features characterized their behavior toward each target. A hierarchical classification algorithm (De Boeck & Rosenberg, 1988) was then used to represent the potentially unique clusters of self-with-other beliefs that the individual possessed.

These considerations would appear to argue for an idiographic approach to personality assessment. Indeed, idiographic assessment strategies may be necessary for many purposes. However, social-cognitive theory does not imply that all personality assessment must be idiographic. An analysis of the social-cognitive mechanisms that contribute to personality functioning in one's domain of interest may indicate that a nomothetic assessment strategy is fully appropriate. For example, in much research on perceived self-efficacy, investigators examine a specific domain of functioning and a particular subpopulation of interest. It can be assumed that everyone in that population shares a similar construal of the domain and that individual differences in self-efficacy beliefs can be assessed through a common set of questionnaire items. In the study of academic achievement, for example, students generally possess a common understanding of the overall goals of the educational system and the specific achievements that are necessary to achieve those goals. Individual differences in self-efficacy beliefs can thus be assessed through traditional nomothetic procedures (e.g., Bandura et al., 1996; Caprara et al., 2000).

Another alternative to idiographic assessment is a categorical approach in which one identifies subsets of the population who share underlying social-cognitive dynamics. Such subgroups could be specified on theoretical grounds or identified empirically. Theories of social intelligence, for example, suggest that subgroups of the population share optimistic versus pessimistic strategies for solving problems (Cantor, Norem, Neidenthal, Langston, & Brower, 1987; Spencer & Norem, 1996). Social-cognitive theories of motivation and personality indicate that subsets of the population hold either judgment or development goals in regard to achievement and interpersonal tasks (Dweck & Leggett, 1988; Grant & Dweck, 1999). More data-driven approaches also have been used to identify subsets of the population who share a constellation of social-cognitive variables and an associated pattern of behavior (Vansteelandt & Mechelen, 1998).

In summary, in evaluating whether a given assessment technique is sufficiently sensitive to the unique qualities of the individual, assessors can often base their judgments on existing theory and research on social-cognitive and affective dynamics. Extant work may often indicate that there exists much idiosyncracy in the social and personal beliefs of interest to the assessor or in the patterns of social behavior to which these beliefs contribute. If so, this would dictate that one employ assessment procedures that are sensitive to this idiosyncracy.

Assess Persons-in-Context

A comprehensive assessment of personality must attend to the social contexts in which people live their lives. Social-cognitive theory indicates that context is important to personality assessment for at least three reasons. The first two concern assessments of internal personality structures and dynamics. The third concerns the assessment of overt behavioral tendencies.

As noted previously, many personality processes are activated by social contexts. Situational features differentially activate both knowledge structures (Markus & Wurf, 1987) and the self-referential cognitive and affective processes through which people regulate their actions (Bandura & Cervone, 1983; Cervone, 1993; Cervone et al., 1991; Cervone & Wood, 1995). Different situational features may activate the same personal process for different individuals (Mischel & Shoda, 1995). A key assessment task, then, is to map the relation between personality processes and aspects of the social environment, that is, to identify the situational cues that activate a given social-cognitive or affective personality system. Such person–situation mappings may indicate that people who share similar beliefs differ considerably in the social circumstances in which those beliefs come into play. In research described in more detail later (Cervone, 1997), people who are similar in that they possess self-schemas organized around the notion of shyness are found to differ from one another in that they link this self-knowledge to different interpersonal, social, and achievement settings (Cervone, 1997). A decontextualized assessment of personality would overlook these individual differences.

A second reason that personality assessment must be contextualized is that many personality mechanisms are inherently domain-linked. Social skills, self-knowledge, and beliefs about the social and interpersonal world arise in and pertain to specific sociocultural contexts (cf. Gelman & Williams, 1998). Decontextualized assessments thus would misrepresent the underlying cognitive structures. Research on temperament similarly indicates that inherited affective and motivational systems function in a domain-linked manner (Kagan, 1994, 1998). This further indicates the need to assess persons in context.

A third respect in which context is important to personality assessment is that situation-to-situation variation in overt behavior is revealing of an individual's personality characteristics. People display temporally stable patterns of variability in action (Mischel, 1999; Mischel & Shoda, 1995, 1998; Shoda, 1999; also see Baldwin, 1999; Vansteelandt & Mechelen, 1998; Zelli & Dodge, 1999). Situation-to-situation variability, then, is not mere "noise" that can be discarded by the personologist. It instead constitutes a stable "signature of personality" (Mischel & Shoda, 1995). The assessment of global dispositional tendencies is an insufficient basis for personality assessment, then, because it

disregards situational variability and thereby sacrifices too much information about the individual.

As with a number of the other principles we have outlined, this fifth principle of assessment is defining of, but is not unique to, social-cognitive theory. Other perspectives in personality psychology share the social-cognitivists' concern with assessing persons in context. For example, the interactionist position of Endler and colleagues (Endler, Parker, Bagby, & Cox, 1991) similarly highlights the need for contextualized assessment and "questions the usefulness of global assessments of individual differences" (p. 919).

Illustrative Research: Assessing Systems of Self-Knowledge and Situational Knowledge

Numerous research programs illustrate one or more of the social-cognitive principles of personality assessment that we have outlined. These include not only research in personality psychology (e.g., Cervone & Shoda, 1999b), but work in clinical psychology that assesses cognitive structures underlying psychological distress and behavioral change (Chamberlain & Haaga, 1999; Ingram & Kendall, 1986; Segal & Shaw, 1988). It is beyond our scope to review this literature here (but see Caprara & Cervone, 2000). Instead, we briefly describe recent research of ours that illustrates some of the principles and advantages of social-cognitive theory.

One line of research has explored the classic question of cross-situational coherence in psychological response (Cervone, 1997, 1999). This problem typically has been addressed through top-down dispositional strategies. Investigators have gauged the degree to which populations of individuals behave consistently with respect to high-level trait constructs (Mischel, 1968). Although there have been significant, novel advances in this approach (e.g., Bem & Allen, 1974; Epstein, 1979; Jackson & Paunonen, 1985), the work generally has shed little light on the psychological mechanisms that causally contribute to cross-situational coherence in response. In contrast, we adopt a bottom-up social-cognitive approach whose fundamental goal is to assess a system of psychological mechanisms that contribute to personality coherence. We explore how both self-knowledge and situational beliefs contribute to cross-situational coherence in perceived self-efficacy (Cervone, 1997, 1999); we focus on self-efficacy appraisals because they, in turn, causally contribute to behavioral and affective tendencies (Bandura, 1997).

Theoretically, we posit that two factors contribute to cross-situational coherence in self-efficacy appraisals; both of these are aspects of personal knowledge, using the distinction between knowledge and appraisal (Lazarus, 1991) outlined earlier. One factor is self-schemas (Markus, 1977). Any given aspect of schematic self-knowledge may come to mind in diverse contexts and contribute in a consistent manner to the formation of context-specific self-efficacy appraisals. The other factor is situational beliefs, specifically people's beliefs about how a given schematic personal attribute relates to everyday social settings. The assessment task, then, is to assess self-schemas, situational beliefs, and self-efficacy appraisals in a manner that is sensitive to the unique qualities of the individual. To assess self-schemas, participants wrote essays describing their personal strengths and personal weaknesses; the open-ended nature of this task enabled us to detect idiosyncratic beliefs about the self. Situational beliefs were assessed via a categorization task in which participants rated the relevance of each of 81 common circumstances to their most important personal characteristics; this assessment enabled us to detect potentially unique beliefs about social settings and their relation to personal attributes. Finally, participants completed a multidomain self-efficacy questionnaire in which they rated their confidence in performing specific behaviors in concrete, well-specified situations. The situational descriptors from the categorization task were embedded in the self-efficacy items, which enabled us to identify clusters of schema-relevant situations across which people are predicted to have high and low levels of self-efficacy.

Two findings are of note. First, we were able to identify significant patterns of cross-situational coherence (Cervone, 1997, 1999). People felt significantly more (less) efficacious across sets of situations that they saw as relevant to their personal strengths (weaknesses). Second, the patterns of cross-situational coherence identified through these social-cognitive assessments often violated the structure of traditional dispositional categories. For example, consider a subset of the personal and situational beliefs of one of our participants, who saw herself as "determined" (Figure 1). In this individual's belief system, the characteristic determined was seen as relevant to a range of achievement and interpersonal circumstances. Although these circumstances may have formed a meaningful "equivalence class" (Bem, 1983) for this individual, in all likelihood they would not be grouped together in any nomothetic analysis of individual differences in the population. This is because the participant's grouping of situations and behaviors was one that included aspects of a number of distinct individual-difference constructs and did not include other aspects of those same constructs. By employing assessments of personality structure that attended to the potentially idiosyncratic qualities of individuals and to the social contexts in which people live their lives, we were able to identify

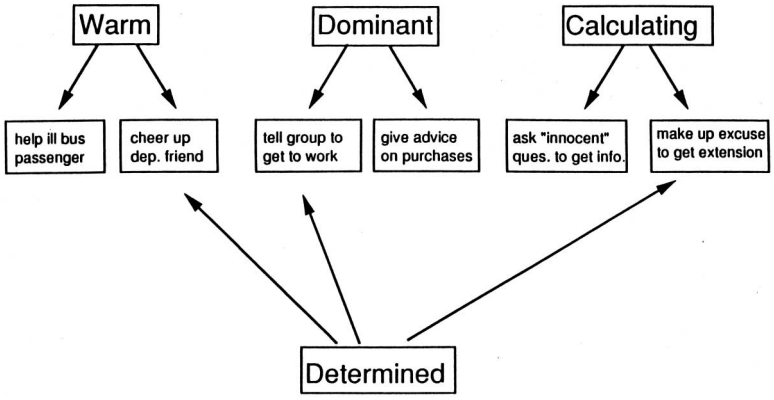

Figure 1. Analyses of one participant from data set of Cervone (1997, 1999). The figure displays one of the individual's schematic personal attributes ("Determined") and some circumstances that she judged relevant (indicated by arrows from "Determined") and not relevant to this attribute. The figure also illustrates how these circumstances might typically be grouped together in a nomothetic analysis of individual-difference constructs.

patterns of cross-situational coherence that might have been missed by assessment strategies that focus on global, decontexualized psychological constructs (also see Cervone & Shoda, 1999a).

Similar themes were found in research by Jencius (1999) on personality factors that influence the social adaptation of international exchange students living abroad. These students face a multiplicity of novel social, interpersonal, and intellectual challenges that constitute exactly the sort of "life transition" (Cantor & Kihlstrom, 1987; Sanderson & Cantor, 1999) that tests one's personal resources and thus reveals underlying individual differences in social-cognitive structures (also see Wright & Mischel, 1987). In this work, personality assessments took place across a series of sessions in which students (a) enumerated schematic personal strengths and weaknesses in open-ended essays, (b) categorized the relevance of each of a large number of everyday social situations to their most salient strengths and weaknesses, and (c) completed a multidomain self-efficacy questionnaire that contained many items tailored to the challenging circumstances faced by the exchange student. Findings revealed that the students had consistently high and low self-efficacy perceptions across idiographically identified sets of situations that were relevant to their positive and negative schematic attributes. Similar results are not obtained when one examines self-efficacy beliefs with respect to generic, nomothetic personality attributes (Jencius, 1999). Again (cf. Cervone, 1997), this bottom-up strategy of assessment reveals patterns of personality consistency that might be missed in a nomothetic top-down approach. Students display consistent patterns of response across sets of situations that differ from person to person and from traditional dispositional categories.

Note that in the work of both Jencius (1999) and Cervone (1997), cross-situational coherence did not derive from any singular psychological mechanism. There was no evidence of a trait of generalized self-efficacy; indeed, patterns of both high and low self-appraisals were identified for each person. Cross-situational coherence was not predictable from assessments of self-schemas alone; one needed also to consider participants' situational beliefs. Situational construals did not uniformly predict self-efficacy appraisals, but did so only with respect to schematic personal attributes. No isolated social-cognitive processes independently produced or corresponded to coherence in response. Instead, cross-situational coherence was understood by reference to interactions among multiple underlying mechanisms. In this respect, the findings illustrate the general principles of bottom-up explanation and the dynamic systems analyses outlined earlier.

Work by Shadel and colleagues (Shadel et al., 2000; also see Shadel & Mermelstein, 1996) advances a social-cognitive theory of smoking and cessation. They posited that three aspects of personal knowledge contribute to smoking outcome: (a) a smoker self-schema, that is, a smokers' knowledge of psychological characteristics that uniquely describe them as smokers and differentiate them from nonsmokers; (b) an abstainer ideal-possible self (cf. Higgins, 1987), which represents knowledge of the nonsmoking person that the smoker strives to become; and (c) an abstainer ought-possible self, which consists of smokers' beliefs about the kind of person they should or ought to become, including recognition of social and interpersonal obligations associated with smoking and quitting smoking. It was presumed that all individuals had some knowledge in all three domains. However, the

content of that knowledge, the degree of its elaboration, its organizational structure, and the life circumstances in which it becomes activated might vary idiosyncratically.

This theoretical framework (Shadel et al., 2000) dictates the requirements for assessment. One must (a) tap each of three domains of knowledge in ways that are sensitive to unique cognitive content and organizational structure and (b) determine the situations that activate these cognitive domains. To accomplish this, Shadel et al. employed idiographic assessments. Participants described each aspect of self-concept in free-response written descriptions and subsequently judged whether each of a series of potentially smoking-related circumstances was relevant to each of the three aspects of self.

Findings revealed that to understand the personality structure of the individual smoker, it was necessary to assess a system of interacting self-referential and situational beliefs. Different individuals who possessed similar views of self were found to differ substantially in how they linked these beliefs to social settings (Figure 2). An assessment of decontextualized personal attributes, then, would not enable one accurately to predict smoking behavior (see Gilbert, 1995). Shadel et al. (2000) found that the situation-to-situation variability in the degree to which a schema is activated is a stable indicator of personality (cf. Mischel & Shoda, 1995). By assessing a system of potentially idiosyncratic personal and situational beliefs, then, one uncovers individual differences that would have been missed in a traditional assessment approach.

Summary and Conclusions

In summary, a social-cognitive approach to personality yields a theory of personality assessment that differs strikingly from the trait-dispositional assessment strategy that has predominated in the field. Unlike a traditional dispositional approach, social-cognitive theory sharply distinguishes between the assessment of internal personality structures and overt behavioral dispositions. When assessing internal structures, assessors do not target a list of independent variables, but rather a system of interacting psychological mechanisms. When assessing dispositions, they do not confine themselves to charting mean-level tendencies, but also attend to distinctive variations in action from one context to the next. In social-cognitive theory, assessments capture not only current psychological tendencies, but also personal determinants of action that contribute to development over the course of time. One assesses not only individual differences, but also the within-person system of psychological attributes that contribute to personal identity and uniqueness. Assessment does not remove the individual from the circumstances of his or her life; instead, assessors strive to

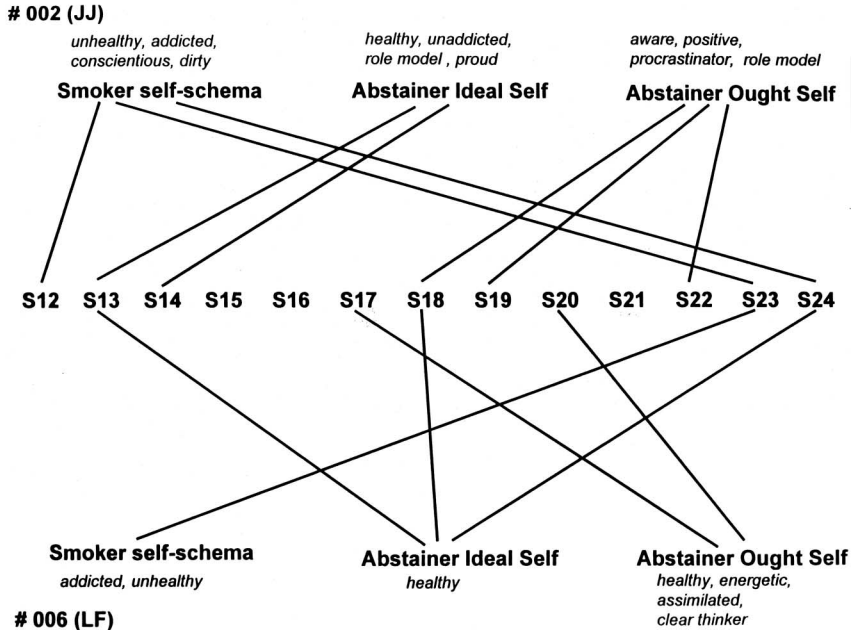

Figure 2. Schematic representation of personal and situational beliefs of two participants (# 002 and # 006) in a smoking cessation program (Shadel et al., 2000). The top and bottom rows display the content of each of three aspects of self-concept. The middle row lists a set of social settings that one might subjectively link to each self-aspect. Lines depict the links in the belief systems of the two individuals.

capture persons-in-context, that is, the ways in which the structures of personality come into play as individuals interact with the settings and challenges that make up their day-to-day lives.

However one judges its merits, the social-cognitive strategy of personality assessment presented here unquestionably yields two advantages that generally do not accrue from traditional assessment procedures. The first is that it uncovers idiosyncratic patterns of personality coherence. Assessments target the cognitive structures that people employ to interpret events, reflect on themselves, and regulate their actions. The content and interconnections among these structures can vary in a large number of ways from one individual to the next. Assessing a multi-component system of social-cognitive structures thus inherently sheds light on not only commonalities among people, but individual uniqueness. Social-cognitive theory, then, represents one way of capturing the uniqueness of the individual within a general model of personality structure, processes, and functioning.

The second advantage involves the question of psychological change. One goal of personality assessment is to reveal psychological qualities that can be modified or further developed (should the individual so wish) for the benefit of individual welfare. Assessing abstract tendencies that are thought to be completely unaffected by psychosocial experiences (McCrae & Costa, 1996) does relatively little to further this goal. The social-cognitive theory presented here, in contrast, takes on this task directly. Cognitive and behavioral strategies for restructuring beliefs, boosting self-efficacy perceptions, and enhancing personal competencies are well developed (Barlow, 1993). Social-cognitive assessments, then, tap psychological mechanisms that can themselves become targets of clinical change.

At its present state of development, social-cognitive assessments of personality clearly have limitations. Investigators have relied heavily on explicit self-report techniques, and these may be insensitive to certain types of psychological content (Westen, 1991). They have devoted relatively little attention to the question of biological temperament and to assessing the ways in which temperamental factors may contribute to the development of social-cognitive structures. These and other limitations pose challenges to the future development of social-cognitive theory. It is our hope that the present work may help spur these developments.

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