One

OVERVIEW

Methods for eliciting and interpreting stories told about pictured scenes are known generically as *thematic apperceptive techniques*, traditionally classified as projective instruments but also viewed as performance-based measures of personality. What all projective techniques have in common is that each presents a task that maximizes the imprint of individuality because there is no single correct approach to meeting the performance demands. The broader conceptualization of projective tests as *performance-based measures of personality* recognizes the essential distinction within the field of personality, between measures calling for the individual to navigate a task or to report information sought by a questionnaire or interview (see Meyer & Kurtz, 2006; Teglasi, 1998). Personality performance measures are distinct from the more structured cognitive performance measures. Personality tasks are used to evaluate problem-solving and reasoning under conditions of uncertainty without an obvious correct answer, whereas cognitive tests (intelligence or academic achievement) present clear-cut problems, the answers to which are easily classified as being correct or not. In the absence of a single right or wrong solution, evaluation of the responses to storytelling tasks occurs by qualified professionals in accord with their theoretical framework and training as well as preference for a particular interpretive scheme.

Although subjected to criticism, the set of pictures introduced by Morgan and Murray (1935) as the Thematic Apperception Test (TAT) remains the most popular (Archer, Marnish, Imhof, & Piotrowski, 1991; Watkins, Campbell, & McGregor, 1988; Watkins, Campbell, Nieberding, & Hallmark, 1995). The use of these pictures, however, did not remain wedded to Murray's interpretive system, and a plethora of interpretive approaches was subsequently developed. Additionally, a variety of different picture stimuli and accompanying interpretive procedures were introduced as variations of the TAT.

HISTORY OF THEMATIC APPERCEPTION TECHNIQUES

The introduction of the TAT stimuli (Morgan & Murray, 1935; Murray, 1938, 1943) popularized the idea that telling a story to pictured scenes depicting complex social situations would reveal important aspects of personality. The use of pictures to elicit stories had been reported prior to the introduction of the TAT but only in four obscure studies (cited in Tomkins, 1947).

At the time that the TAT was being developed, the Rorschach technique, emphasizing *perception*, was gaining popularity. For Murray (1938), the TAT offered the advantage of assessing *apperception*. He defined *perception* as recognition of an object based on sensory impression and *apperception* as the addition of meaning to what is perceived. Accordingly, telling stories about pictured scenes was an *apperceptive* task requiring the interpretation of the pictured cues to discern characters' motives, intentions, and expectations. Although Murray introduced a specific, theoretically based system for interpreting the stories told to TAT pictures, the appeal and the flexibility of the storytelling technique led to the introduction of many different sets of picture stimuli and many interpretive approaches for the TAT pictures (see Chapter 8).

Interpretive procedures for the TAT and its derivatives have been designed either for the study of personality (for a summary, see Smith, 1992) or for clinical use (for a summary, see Jenkins, 2008). Personality researchers favored well-defined criteria to assess specific personality constructs (see Smith, 1992), whereas clinicians preferred broader constructs to assess the functioning of the "whole" person. Many insisted that the TAT be interpreted and not scored (see edited volume by Gieser & Stein, 1999). Generally, clinicians preferred to use the technique as a flexible tool for eliciting information that they would then interpret in light of their professional training and expertise. Such an approach is exemplified by Bellak's (1975, 1993) application of psychoanalytic theory to the interpretation of TAT stories. Despite the popularity of the TAT among clinicians, there is no consensus on a particular scoring system and there is no comprehensive set of norms for clinical use. Nevertheless, specific coding procedures have been developed for clinical purposes that are reliably scored and correlate with adjustment (see Jenkins, 2008; McGrew & Teglasi, 1990). Although the psychoanalytic perspective dominated the clinical use of the TAT for over a half-century, other interpretive frameworks were introduced, based primarily in social cognitive theory (Cramer, 1996; Teglasi, 1993, 1998; Westen, Klepser, Ruffins, Silverman, Lifton, & Boekamp, 1991). Rather than undermining its original theoretical foundations, current perspectives expand the basic tenets on which the TAT was grounded.

According to social cognitive theory, real-time information processing is informed by previously organized mental sets or schemas that structure knowledge about the self, others, and the world (Cervone, 2004; Teglasi, 1998). Individuals draw from a storehouse of schemas to interpret current situations, and it is the *interpretation* that drives decisions and actions. What is essential to understand about personality performance measures in clinical use is that they present tasks that are ill-defined as to the desired solution, calling for individuals to impose their mental sets to interpret and respond to ambiguous or novel stimuli.

Subsequent to the formulation of the projective hypothesis (Frank, 1939), the TAT and other measures permitting open-ended responses were designated as projective techniques. A fundamental assumption of all projective methods, including thematic apperceptive techniques, is the "projective hypothesis," which posits that stimuli from the environment are perceived and organized by the individual's specific needs, motives, feelings, perceptual sets, and cognitive structures, and that in large part this process occurs automatically and outside of awareness (Frank, 1948). The pervasive influence of the unconscious on perception, thought, behavior, and motivation is well documented (Bargh & Morsella, 2008; Duckworth, Bargh, Garcia, & Chaiken, 2002). The projective hypothesis bears a striking resemblance to current definitions of the "unconscious" as comprising qualities of the mind that influence conscious thought and behavior through processes that are outside of immediate awareness (James, 1998; Uleman, 2005). Such automatic processes shape responses to projective tests and to similarly unstructured life encounters.

Historically, much of the criticism directed at the TAT was rooted in the incorrect view that the TAT and self-report provide equivalent information. Since self-report methods were viewed as being the more straightforward and less labor intensive way to find out what a person believes (just ask directly), projective tests were challenged to show that they add value beyond self-report. In this context, the low correlations between narrative motive measures and corresponding self-reported traits were misjudged as indicative of lack of validity of one or the other. Trait theorists tended to question the reliability and validity of projective measures (e.g., Lilienfield, Wood, & Garb, 2000), whereas motive theorists took the low correlations to be evidence of the distinctiveness of the constructs assessed with self-report and performance instruments (e.g., Brunstein & Maier, 2005).

Research has established dualities in psychological constructs that inform the use of measurement with self-report and personality performance measures such as the TAT. Explicit versions of constructs are attributed to the self and available to introspection, hence to self-report, whereas implicit versions are not

accessible by introspection (see Bornstein, 2002; James, 1998; McClelland, Koestner, & Weinberger, 1989; Westen, 1990, 1991; Winter, John, Stewart, Klohnen, & Duncan, 1998). Changes in the theoretical landscape due to advances in understanding the profound role of the unconscious in human functioning has led to the realization that the human mind is too complex to be characterized by a single assessment method.

DON'T FORGET

Attributes of Projective Techniques (including TAT)

- Stimuli are sufficiently ambiguous to preclude a ready response, thereby requiring individual interpretation.
- There are many "correct" ways to approach the task.
- The response is open-ended and maximizes the imprint of organization.

THEORETICAL FOUNDATIONS

The projective hypothesis and schema theory are similar in their central tenets. Both point to the role of previously organized mental "sets" in the interpretation of current stimuli, and both emphasize the influence of these mental structures as occurring outside of conscious awareness (Fiske, Haslam, & Fiske, 1991; Wyer & Srull, 1994). In essence, schema theory and research may be viewed as elaborating the workings of the projective hypothesis and as supporting performance measures of personality such as the TAT. The story form itself is a schema that captures the organization of prior experience and provides the structure for ordering current experience (Teglasi, 1998). To understand the operation of schemas in guiding responses to personality performance tests, it is necessary to consider basic dualities in psychological constructs and in modes of processing information.

Dualities in Psychological Constructs and Modes of Information Processing

The well-documented distinction between *implicit* and *explicit* versions of psychological constructs appears to correspond to a basic dichotomy between the "experiencing self," driven by emotion that imparts a sense of genuineness, and the "verbally defined self," guided by more dispassionate processing

of verbal information (James, 1890). Explicitly attributed constructs express what is important to one's self-definition or identity or what is viewed as socially desirable (being a good student) that may or may not be supported by actual experiences (enjoying the process of learning). In a series of classic articles, McClelland and his colleagues (Koestner & McClelland, 1990; Koestner, Weinberger, & McClelland, 1991; McClelland et al., 1989) argued that implicit achievement motivation (measured with the TAT) and explicit achievement motivation (measured with self-report) develop by different routes and have different patterns of relationships with other variables (see meta-analytic review in Spangler, 1992). Implicit motives are dispositional preferences for particular qualities of affective experiences, grounded in personally significant encounters and spurring spontaneous reactions. In contrast, self-attributed motives are conceptualizations about the self that may be more rooted in logical, cultural, and social bases for a desired self-description than personal inclination. Self-attributed motives forecast responses to situations that provide incentives for expressing socially promoted values or for presenting the self in a particular light but are not necessarily linked to the individual's affective preferences. Implicit motives develop through intrinsic enjoyment generated when doing tasks or experiencing activities or situations and, therefore, predict self-selected, goal-related activities (Biernat, 1989; Koestner, Weinberger, & McClelland, 1991; McClelland et al., 1989). The TAT-assessed implicit motives predicted long-term behavioral trends, whereas questionnaire measures of self-attributed motives predicted short-term choice behaviors. Dual versions of numerous constructs measured with self-report and performance tasks have since been proposed (see Rapid Reference 1.1).

Rapid Reference 1.1

Dual Versions of Constructs: Implicit and Explicit Personality

- **Achievement motivation** (McClelland et al., 1989)
- **Self-esteem** (Bosson, Swann, & Pennebaker, 2000; Spalding & Hardin, 1999)
- **Dependency** (Bornstein, 1998)
- **Anxiety** (Egloff, Wilhelm, Neubauer, Mauss, & Gross, 2002)
- **Attitudes** (Greenwald, Banaji, Rudman, Farnham, Nosek, & Mellott, 2002)
- **Aggression** (Frost, Ko, & James, 2007)

Rapid Reference 1.2

Dual Process Information Processing Systems (see Evans, 2008)

System One	System Two
Not reflectively conscious	Conscious
Automatic, effortless	Deliberative, effortful
Rapid, intuitive, simultaneous processing	Relatively slow, controlled, analytic processing
High capacity to process a great deal of information	Capacity limited by attention and working memory
Experiential	Rational
Implicit	Explicit

Two distinct ways of knowing and of information processing (see Rapid Reference 1.2) are relevant to implicit and explicit versions of psychological constructs**.** The essential contrast is between processing that is unconscious (implicit), rapid, automatic, and capable of simultaneously handling a great deal of information and processing that is conscious (explicit), slow, and deliberative (for a review, see Evans, 2008). This dichotomy characterizes information processing that is rational and experiential, and conflict between these modes of thought has been described as a discrepancy between the "heart" and the "head" (see Epstein, 1994; Epstein & Pacini, 1999). The "heart" tends to harbor convictions that do not require new evidence, deriving credibility by virtue of their connection to emotions. The "head" responds to logic and rational ideas that may change more easily with new evidence. Of course, there are points in between the extremes reflecting compromises between the two thought systems.

Individuals bring to any encounter implicit and explicit (self-attributed) motives or convictions as well as automatic and controlled modes of information processing that support both implicit and self-attributed convictions. Although implicit and explicit schemas are salient in different contexts, as noted earlier, they join together in their influences on behavior and adjustment. Under some circumstances, external incentives may override an individual's implicit motives (Rudman, 2004) and conflict between explicit and implicit psychological constructs may lead to various compromises that have implications for well-being. Discrepancy between implicit and self-attributed motives to achieve is associated with decreased subjective well-being and increased symptom formation (Baumann, Kaschel, & Kuhl, 2005).

Discrepancies between implicit and self-attributed inclinations may be resolved differently depending on their social desirability in a culture (achievement or aggression). According to the *channeling hypothesis* (Winter, John, Stewart, Klohnen, & Duncan, 1998), when facing a conflict between their desires to maintain a particular self-image or public reputation and their implicit inclinations, individuals will allow explicit motives to influence the channels for expressing the implicit motives. For instance, a person who does not endorse an aggressive self-image, but implicitly experiences hostile tendencies, would express these tendencies in ways that are indirect (Frost, Ko, & James, 2007). Assessing both versions of psychological constructs enables researchers and practitioners to weigh the relative influence of explicit and implicit versions of the same personality variable as a function of the situational context.

Public and Personal Knowledge Structures

A fuller appreciation of the relationship between schema theory and the projective hypothesis necessitates a distinction between two types of knowledge structures that organize experience. One is independent of the knower, and the other is unique to the knower (Mandler, 1982; Wozniak, 1985). Knowledge that exists independently of the knower is *public*, whereas knowledge that is dependent on the individual's experiences is *personal* (see Fig. 1.1). All schemas, public or personal, are outgrowths of the capacity of human beings to detect, process, and use information about covariations of stimuli and events in their surroundings (such as a change in contingencies), often without deliberate effort or conscious awareness (Dowd & Courchaine, 2002; Lewicki, Czyzewska, & Hill, 1997; Lewicki, Hill, & Czyzewska, 1992). Schemas that capture the regularities of the external world that are amenable to proof by logic, evidence, or social consensus may be called *public*. However, schemas that coordinate perceived regularities in the inner and outer worlds are more aptly characterized as *personal* because they are unique to the individual and subject to confirmation only by like-minded others.

The *public* schemas may be further categorized as *logical* and *social*. Logical schemas such as mathematical formulas or scientific principles describing observed relationships among facts or ideas (such as the formula for calculating the circumference of a circle) develop and change through critical analysis, logical proof, or direct evidence. Social schemas organizing regularities in routine events (how to order a meal in a restaurant, what happens when visiting the dentist), rules or beliefs that are widely held in a culture (raising one's hand in class, tipping the server), or the layout of public spaces (such as an airport) are maintained by

consensus, not necessarily logic. Such social schemas provide clear expectations about what will happen and how to behave in commonly occurring situations (Abelson, 1981; Schank & Abelson, 1977).

A twofold classification of *personal schemas* parallels the distinctions between two versions of psychological constructs, *implicit* and *explicit*, described above (also see Payne, Burkley, & Stokes, 2008). *Explicit personal schemas* are models about the self (in relation to others and the world), including motives that a person endorses (self-attributes) on the basis of social values or importance to identity but not necessarily supported by patterns of regularities in actual experience. *Explicit* personal schemas are active in situations that are relatively structured, providing cues or incentives (reminders, supervision) salient for a particular self-image. *Implicit personal schemas* reflect experiential regularities as an ongoing synthesis of bidirectional and reciprocal encounters of individuals with their surroundings (see Teglasi & Epstein, 1998). As individuals notice patterns in the external world such as links between actions and outcomes and regularities in their emotional states in relation to the stream of external events, they form expectations about what actions can or cannot bring about certain effects. Therefore, *implicit personal schemas* include ideas about sources of distress and about one's efficacy to regulate uncomfortable states or to bring about desired outcomes, capturing the reciprocal relations among affect, cognitions, and behavior**.** Personal schemas, particularly if implicit, change more readily through experiential learning (detecting new regularities, reframing experiences) than through didactic methods (Dowd, 2006).

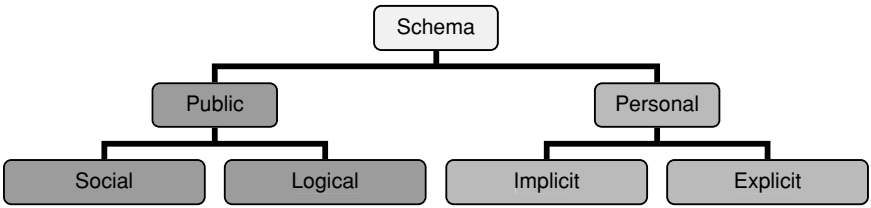

Figure 1.1 Public and Personal Schemas

Each individual develops unique patterns of assumptions about the self, the world, and relationships, arriving at a particular stance toward life through the complex interplay of maturation, temperament, cognitive development, and socialization (Stark, Rouse, & Livingston, 1991). Personal schemas are representations that are idiosyncratic to the knower because their development is influenced by individual differences shaping the transactions with the environment as well as the interpretation of those transactions (see Teglasi, 2006). Individuals'

strategies for synthesizing cues provided in the scenes portrayed in TAT pictures and for organizing the response are analogous to the manner in which they apply previously acquired knowledge for adaptive use in novel, stressful, or ambiguous situations. Likewise, schema theory assumes that successful adaptation to unfamiliar situations requires the coordination of what one "perceives" in the present with what one "knows" from previous experience.

The construct of the personal schema brings together models of perception, cognition, memory, affect, action, and feedback, in social and cultural contexts, thereby incorporating the various perspectives for understanding personality. The schema construct also bridges the study of normal personality processes with the study of psychopathology because schema-driven information processing allows previously organized knowledge to influence perception of ongoing experiences in adaptive or maladaptive ways. Knowledge structures that accurately represent reality increase efficiency in identifying perceptions, organizing them into meaningful units, filling in missing information, and devising a strategy for seeking new information as needed. However, maladaptive schemas bias attention and information processing to conform to an initial misconception and resist change despite contradictory evidence (e.g., Beck, 2002; Beck & Clark, 1997; Horowitz, 1991; Riso, du Toit, Stein, & Young, 2007).

Dual theories of information processing account for the development of public and personal knowledge structures and have implications for the use of tools to assess the schemas that represent these two modes of thought.

DON'T FORGET

Projective techniques are concerned primarily with the application of knowledge structures that are unique to the knower to organize responses to ambiguous stimuli.

THE SCHEMA AND THE STORY

The story form and personal schemas are similar in that both are products of prior synthesis of experience and inform subsequent information processing. The story implicitly carries the schemas by which individuals

CAUTION

Personal schemas are resistant to change because the processes that led to their development may still be operating and because schemas tend to organize and modify new experiences to fit the preexisting structures.

order their experiences, structuring the stream of life events as episodes with a beginning, middle, and end (Oatley, 1992). Far more than delineating events that occur at a particular time and place, the story conveys personal meanings by weaving together events, emotions, thoughts, and behaviors in ways that reflect causal, conditional, and temporal understandings (that even preschool children possess; see review, Flavell & Miller, 1998; Fivush & Haden, 1997; Wellman & Gelman, 1998). In essence, the story functions as a tool for thinking (Bruner, 1990; Hermans, 2003), incorporating the narrator's understanding of the mental world, termed "theory of mind," based on the recognition that outward actions are organized by the inner world of thoughts, beliefs, feelings, wishes, and intentions (Fonagy & Target, 2003).

Children's understanding of mental states develops in tandem with their capacity to incorporate psychological causality in recounting autobiographical memories. Narrative accounts of experience reflect understandings of mental states as causally related to behaviors (see review, Reese, 2002). Akin to the schema, theory of mind is not a collection of isolated beliefs but captures the reciprocal relations among mental states, perceptions of environments, decisions, plans, and actions (Wellman, 1990). As do schemas, theory of mind operates outside of consciousness and provides a foundation for processing social information, including classifications and relations among mental elements (thoughts, feelings, intentions) and their connections to external events and actions.

Narrative as Cognition

The contrast between narrative and propositional thought parallels the distinction between public and personal schemas. Propositional thought is public, logical, formal, theoretical, general, and abstract, whereas narrative thought is story-like, concrete, specific, personally convincing, imagistic, interpersonal, and includes characters, settings, intentions, emotions, actions, and outcomes (see Bruner 1986, 1990). Narrative and propositional modes of thought provide distinct ways of ordering experience. Propositional or paradigmatic thought employs operations by which one establishes categorization or conceptualizations (Bruner, 1986; Hermans, Kempen, & Van Loon, 1992; Vitz, 1990) and encompasses logical or scientific universals that transcend personal experience and specific context. Narrative thought also establishes categories, but they are contextualized in relation to specific persons, times, and places and invested with emotion. Logical thought aims to establish truth, whereas the narrative mode convinces by its meaningfulness (Parry & Doan, 1994). (See Rapid Reference 1.3.)

Rapid Reference 1.3

Empirical and Conceptual Support for the Assessment of Schemas with Storytelling

1. A growing body of literature urges researchers to focus on stories as the natural mode through which individuals make sense of their experiences (e.g., Bruner, 1990; McAdams, Diamond, de St. Aubin, & Mansfield, 1997). The ability to construct stories with a sensible sequence of events, reasonable causal relationships, and cohesive emotional experiences is an important developmental task of childhood, with implications for mental health (Mancuso & Sarbin, 1998). Storytelling is closely linked to listening and to reading comprehension (Blankman, Teglasi, & Lawser, 2002).
2. The principles that organize experience are evident through various narrative procedures including early memories, autobiographical recollections, and stories told to picture stimuli (Demorest & Alexander, 1992; McAdams, Hoffman, Mansfield, & Day, 1996). Thematic coherence (agency and communion) was evident across narratives written by adults and college students about personally important scenes in their lives and their TAT stories (McAdams, Hoffman, Mansfield, & Day, 1996). Scripts extracted from autobiographical memories and from stories told to TAT cards a month later supported the conclusion that scripted knowledge structures are superimposed on new affective stimuli (Demorest and Alexander, 1992).
3. Socially competent behavior involves complex skills starting with accurate encoding and interpretation of relevant cues from external and internal sources, formulating intentions, maintaining goals, generating appropriate responses, and using strategies to enact and evaluate the chosen response (Dodge & Price, 1994; Elias & Tobias, 1996). Although these components of social problem solving may be conceptually separated, they are linked together in the story form as a framework for thinking about social situations (e.g., Teglasi & Rothman, 2001; Teglasi, Rahill, & Rothman, 2007).
4. Schemas that represent relationships maladaptively are functionally related to psychopathology (e.g., Downey, Lebolt, Rincon, & Freitas, 1998; Oppenheim, Emde, & Warren, 1997). Schematic processing problems that reduce flexibility in processing information promote vicious cycles where ineffective schemas are preserved, thereby maintaining dysfunctional emotions, attitudes, and behaviors (Greenberg, Rice, & Elliott, 1993). Cognitive therapeutic approaches are increasingly grounded in schema theory (e.g., Riso, du Toit et al., 2007).
5. Stories are important structures that organize experiences. Mental and physical benefits derive from expressing feelings associated with adverse events in an organized way, such as telling a story (Hemenover, 2003; Pennebaker, 1997). However, the experience need not be one's own. Writing about someone else's trauma as if it were one's own produced effects that were similar to writing about one's own traumatic experience (Greenberg, Wortman, & Stone, 1996).

The ability to organize experience into narrative form is a central developmental task, related to children's adjustment (Mancuso & Sarbin, 1998). At about 5 years of age, children's narratives move beyond temporal sequences of events to identify the problem or psychological issue in a situation, and by ages 9 to 11, approximate adult levels (Applebee, 1978; Botvin & Sutton-Smith, 1977; Peterson & McCabe, 1983). Children who do not provide cohesive narrative accounts of events or experiences are perceived as less competent academically and socially (Bloome, Katz, & Champion, 2003). Exchanging stories is a fundamental mode by which people share their subjective reality, and telling the right story at the right time in a social conversation has been viewed as a hallmark of social intelligence (Schank, 1990). As the language of experience, it has been argued that virtually all meaningful social knowledge is learned in the form of stories (Schank & Abelson, 1995).

TAT and Autobiographical Narrative

The story is the primary means by which episodes in daily life are represented in memory (Schank, 1990), providing a structure for ordering the sequences of events, situating them in a particular place and point in time, and connecting them to feelings, thoughts, and behaviors. According to script theory, the *scene* or recollection of a specific episode in one's life contains at least one basic affect (e.g., joy, excitement, fear, anger) and one object of that affect (Tomkins, 1987; Carlson, 1981). Scenes become organized into families or groupings, comprising *scripts* that govern the interpretation, creation, and organization of new scenes and recollections of prior scenes. Tomkins' notion of *script* corresponds to the *personal schema*. The ability to recall scenes (episodic memory) and to organize them into scripts (general event memory) serves adaptive functions (see review, Nelson & Fivush, 2004). Giving a coherent account of a specific experience is necessary for communication, whereas the synthesis of events into general narrative structures (scripts or schemas) aids the recall of prior episodes (filling in the gaps) and informs interpretations of subsequent ones.

Recalled episodes are not expected to correspond with what actually happened. Rather, the greatest value in autobiographical studies lies in their illumination of *current* life meanings (Tomkins, 1987). Likewise, experiences described by clients to their therapists do not correspond to historical facts but constitute "story lines" that have been transformed by psychological processes (Schafer, 1992). Similarly, according to the life-story model of adult identity (McAdams, 1985, 1993; McAdams & Pals, 2006), individuals selectively value past experiences that are continuous with the present, thereby lending coherence to their lives. Memories that are relevant for individuals' implicit and explicit goals or motives

are more accessible (Woike, Mcleod, & Goggin, 2003). Implicit motives operate in the recall of emotionally charged experiences (Woike, Gershkovich, Piorkowski, & Polo, 1999), whereas explicit motives operate in the recall of experiences and information relevant to maintaining the self-concept (DeSteno & Salovey, 1997; Singer & Salovey, 1993; Woike et al., 2003).

The details of stories told to TAT stimuli are not assumed to represent actual experiences. However, like other sources of narrative (the interview, autobiographic stories, specific recollections, diaries), TAT stories are amenable to analysis in terms of the categories and principles that organize experience such as causal understandings, means-ends sets, abstract themes, affective scripts, and complexity in the representation of persons (e.g., Alexander, 1988; Arnold, 1962; Demorest & Alexander, 1992; Leigh, Westen, Barends, Mendel, & Byers, 1992; McAdams, Hoffman, Mansfield, & Day, 1996; Schank, 1990). Early memory narratives of patients at the start of therapy and TAT stories were coded with the *Social Cognition and Object Relations Scale* (SCORS; Westen, 1995) and both predicted the therapeutic alliance, a variable crucial to outcomes (see Pinsker-Aspen, Stein, & Hilsenroth, 2007). Broad motivational themes (agency and communion) coded from TAT stories are congruent with thematic content of diaries of daily memories (Woike & Polo, 2001). Through unconscious processes, individuals apply the categories for thinking about significant others to new encounters (Andersen, Reznik, & Glassman, 2005), and these categories may be gleaned from analysis of stories about early experiences and about TAT cards.

The categories built into schemas depend on individuality in detecting patterns of regularities across experiences. The raw materials for detecting patterns are the observed distinctions. As individuals interact with their social and physical worlds, they construe reality (expectations, causal understandings) by registering patterns in what they notice as relevant in their surroundings. When co-occurring thoughts, emotions, and action tendencies are noticed in a given environmental context, the brain clusters them together (see Mischel & Ayduk, 2004) such that, when one element of the cluster is brought to mind, it activates the others (a visit to one's childhood home calling forth certain feelings and thoughts).

An examination of neural networks involved in autobiographical memory (using event-related functional Magnetic Resonance Imaging) demonstrated that TAT stimuli activated brain areas known to be involved in autobiographical memory retrieval (Schnell, Dietrich, Schnitker, Daumann, & Herpertz, 2007). The TAT cards produced similar activation in those with Borderline Personality Disorder (BPD) and control participants but, unlike the control participants, those with BPD showed hyperactivation of these areas for both the affectively loaded TAT and for neutral stimuli. This finding that those with BPD did not differentiate between

emotional and neutral stimuli means that such distinctions are not available in daily life to enrich the implicit process of schema development. What is not noticed, even implicitly, cannot be classified into categories that are built into the schemas.

When the individual is actively contemplating an interpersonal situation or task, such as telling stories about pictorial stimuli, he or she constructs a working model that combines internal and external sources of information (see Rapid Reference 1.4). Stories evoked by pictures permit the evaluation of the categories applied to information processing that contribute to well-being as well as to distress or counterproductive behavior. Structural features of children's TAT stories reveal distortions and deficits in processing information that are associated with emotional disability identified in the school system (Lohr, Teglasi, & French, 2004; McGrew & Teglasi, 1990). Qualities of children's schemas such as their accuracy, organization, and complexity have been related to temperament (Bassan-Diamond, Teglasi, & Schmidt, 1995; Lohr et al., 2004), empathy (Locraft & Teglasi, 1997; Teglasi, Locraft, & Felgenhauer, 2008a), as well as to listening and reading comprehension (Blankman, Teglasi, & Lawser, 2002).

Rapid Reference 1.4

The Relationship of TAT Stories to Life Experiences

1. Individuals learn "lessons" from the regularities of day-to-day experiences. When a lesson repeatedly occurs, it may become a type of structure (like grammar) that exists apart from the specific incidents from which the lesson arose (Schank, 1990; Tomkins, 1987). Because abstracted schemas are based on numerous experiences (real or vicarious), they are readily activated (Murray, 1938), particularly in ambiguous situations or by tasks such as the TAT.
2. Individual differences in the synthesis of experiences applied to daily life are paralleled by variations in the construction of TAT stories as (a) piecemeal associations, (b) a direct replay of actual experiences selected from memory, (c) imposition of narrative patterns borrowed from books, other media, or stereotypes, or (d) application of convictions or lessons "abstracted" from experience (Teglasi, 1993) to meet task demands.
3. The inner logic and cohesiveness of the stories together with their content represent how individuals learn from day-to-day experiences and how they apply their knowledge to meet the task demand (e.g., accurately interpreting the stimuli and following instructions).
4. Content that is repeated provides clues about the narrator's concerns or preoccupations (Henry, 1956). However, addressing both the structure and content overcomes the pitfall of attributing too much weight to content (that may be pulled by the stimuli or recent experiences) but not meaningfully incorporated into structures that guide the synthesis of experience (Teglasi, 1998).

Use of the TAT to Measure Narrative Cognition

Once established, personal schemas are vehicles to compare incoming information with existing knowledge. The pre-existing schemas automatically provide the categories and structures for organizing stories told to TAT pictures in line with the instructions and the pictured scenes. Just as one would expect a person to give a coherent account of a prior experience, the stories about TAT pictures are expected to be organized productions rather than fantasies or random associations (Holt, 1961). The narrator's schemas used to interpret the pictured scene and organize ideas when telling TAT stories are applicable to the interpretation of similarly unstructured life situations (Bellak, 1975, 1993). The pictures provide the "givens" to be explained and the instructions call for producing a complete story. The construction of the story entails the superimposition of narrative patterns that apply to the internal representations of prior experience serving as the schemas for ordering the individual's ongoing encounters with the world (see Rapid Reference 1.5). Although permitting a wide range of responses, TAT stimuli are sufficiently structured to detect problems with interpreting the scenes. Overlaps between structural and thematic features of TAT stories with accounts of significant autobiographical episodes are expected because both are constructed according to the principles by which the narrator organizes experiences. However, there is no expectation of resemblance of the surface content of TAT stories to actual happenings.

Rapid Reference 1.5

Social Problem Solving and Standard Questions for Eliciting TAT Stories

What is happening in the picture? Before a concern or problem is resolved, it must first be identified. The individual's storehouse of memories and schemas for understanding social situations is the source for generating ideas about the tensions depicted in the scene and for organizing these ideas. Describing isolated stimulus features does not satisfy the demands of the instructions.

What happened before? The sequence of unfolding events including those prior to the scene depicted reveals the narrator's schemas about social causality (e.g., cause-effect reasoning) and time perspective. The narrator's style of processing social information is seen not only in the interpretation of the immediate circumstances presented in the stimuli but in placing events in a historical context by postulating sequences of events leading up to the scene.

What is the person (or people) thinking and how is that person (or people) feeling? These questions evoke the narrator's understanding of the inner world and capacity to coordinate the inner life and external circumstances of the

(continued)

various characters portrayed in the scene or introduced into the story. Reasoning about intentions, values, and goals is a key component of social information processing. A cohesive story requires the narrator to incorporate each character's thoughts, feelings, or intentions in ways that fit the circumstances, actions, and outcomes.

How does the story end? In a well-constructed story, the details cohere around the ending. Although TAT instructions do not specifically ask for actions or plans to resolve the dilemmas set before the characters, the means to resolving tensions or accomplishing goals are implicit in the storytelling task. The perceived means-ends connections are crucial aspects of schemas and of narratives and are therefore considered the basis for understanding the lesson, moral, or import of the story (Alexander, 1988; Arnold, 1962; Schank, 1990). The narrator's resources for problem solving are indicated not only by the manner in which the characters resolve the dilemmas introduced into the story but also by the manner in which the narrator meets the problem-solving demands of the storytelling task.

Individuals vary in the accuracy, complexity, and organization of autobiographical narratives (see Nelson & Fivush, 2004) as well as of their TAT stories. Some tell stories that reflect coherently organized internal representation of experience presenting a detailed, balanced, and flexible panorama of feelings and intentions promoting an accurate and nuanced map of reality. Others tell stories that reflect an inner world organized according to gross categories or polarized dichotomies that simplify perceptions of the environment. Still others tell stories reflecting piecemeal ideas rather than cohesive patterns of thought. Given that schema development is the product of the individual's synthesis of prior experience, the accuracy and completeness of the schemas may be constrained if information processing is chronically disrupted by problems with the regulation of attention, cognition, or emotion, or by a poor fit between the individual's temperamental tendencies and environmental expectations or by adverse social-environmental conditions. Children with temperamentally high negative emotional reactivity told TAT stories reflecting less complex, more short-term self-regulatory strategies than children with average reactivity (Bassan-Diamond, Teglasi, & Schmidt, 1995; Lohr, Teglasi, & French, 2004).

Schema Activation

Schemas stored in memory are inert until activated. The particular schemas activated are those that have been useful in the past (chronic accessibility) and deemed relevant (by association) to the current context (Anderson, Bothell,

Byrne, Douglass, Lebiere, & Quin, 2004). Once activated, the schemas shape real-time information processing, in part by directing attention, memory, and perception. In some instances, activated schemas promote errors in judgment that are not conducive to adaptive responses. However, executive functions enable the individual to monitor their schemas and, when necessary, to deliberately override one that is activated and substitute alternative schemas (see MacDonald, 2008). Higher order executive functions may be related to the availability of meta-schemas (Singer & Salovey, 1991) that allow the individual to deal constructively with activated schemas. These superordinate schemas are relevant to adjustment and resilience because they influence how individuals reshape their schemas when confronted with daily stress, unforeseen failure, or unexpected upheaval.

Schemas have been viewed as psychological vulnerabilities underlying psychopathology. Dysfunctional schemas are maintained by tendencies to process information in ways that confirm existing schemas, discounting or distorting schema-discrepant information and readily accepting schema-consistent ideas. For instance, the belief that one is generally incompetent may be maintained by tendencies toward harsh self-scrutiny, selective attention to mistakes, discounting successes, or overvaluing mistakes. Cognitive therapy has focused on underlying schemas (see Riso, du Toit et al., 2007) with particular emphasis on overcoming resistance to information that is out of tune with the schema.

Schema Complexity

Cognitive complexity is commonly understood in terms of two components of information processing: *differentiation*, or the ability to perceive and think about multiple dimensions of a phenomenon, and *integration*, or the ability to recognize connections between differentiated dimensions of a phenomenon (e.g., Schroder, Driver, & Streufert, 1967; Suedfeld, Tetlock, & Streufert, 1992). Those with more complex schemas, characterized by more distinctions and more connections among them, may be more prepared to replay negative information constructively by exploring various dimensions rather than ruminating on a single track or making all-or-none judgments. Those with less complex schemas may tend to overestimate the impact of a negative situation because they do not see different aspects of life as separate (see Linville, 1987; Luo, Watkins, & Lam, 2009).

Evidence documenting the link between schema complexity and adjustment has been mixed (Woolfolk, Gara, Allen, & Beaver, 2004), and inconsistencies are due, in part, to how the construct is conceptualized and measured. The schemas may be complex in two distinct ways. In attitude research, the structural complexity of statements may involve *dialectical* complexity, focusing on the tension

between two perspectives, or *elaborative* complexity, focusing on the details of a single perspective (Conway et al., 2008).

Schemas that structure autobiographical memory and TAT stories reflect the processes of differentiation and integration (Woike, Lavezzary, & Barsky, 2001). However, similar to statements about attitudes, complexity in narratives may be evaluated in two ways: the distinction and coordination of different *conceptual domains* (the problem, feelings, thoughts, actions or circumstances, and resolutions) or *elaborations* within a single domain (nuances of negative or ambivalent feelings). A story organized around the sense of oneself as an anxious person would be characterized as *elaboratively complex* if it were dominated by ruminative details about the nuances of potential threats or of anxious states, and as *conceptually complex* if it specified the conditions evoking the anxiety and included goals, coping strategies for the anxiety and the problem, and appropriate connections between means and ends.

DON'T FORGET

TAT stories may be characterized by two forms of complexity—termed *conceptual complexity*, referring to the number of different domains that are distinguished, and *elaborative* complexity, referring to the number of *details* within domains. The latter involves being caught up in nuances and intricacies of a single psychological construct without considering others. For example, in telling a story, an individual might distinguish and connect nuances of negative emotions but give little consideration to other domains such as coping with those emotions. Likewise, an individual may tell an action-packed TAT story but not consider goals or intentions or other domains of experience.

Schema Development

The emergence of mental models about the world is central to human development, allowing individuals to use what they have learned in the past to inform their encounters in the present. The foundation for schema growth is the organized and systematic processing of information that permits the individual to discern regular patterns and rules inferred through experience. Individuals detect, synthesize, and use covariations in patterns of information in the course of myriad interactions with persons in various contexts (Dowd & Courchaine, 2002; Lewicki, Czyzewska, & Hill, 1997; Lewicki, Hill, & Czyzewska, 1992). Pattern detection is supported by individual differences in systems that regulate basic processes such as attention, emotions, cognition, and behavior that

Rapid Reference 1.6

Attention-Deficit/Hyperactivity Disorder (ADHD), characterized by deficits in core cognitive functions such as sustained attention, inhibition, and executive planning, is associated with limitations in appraising others' emotional states (Corbett & Glidden, 2000). Among male adolescents with ADHD, emotion recognition of anger and fear (signals of potential threat) improved after taking medication but remained impaired relative to control participants. Medication may increase readiness to make distinctions, but schema development takes place over time (Williams et al., 2008).

are often studied in the field of temperament or neurosciences (e.g., Posner & Rothbart, 2007). The regulation of attention and emotion is linked to sets of knowledge structures such as emotion understanding that promote children's social competence (see Spinrad et al., 2006; Trentacosta, Izard, Mostow, & Fine, 2006). Selective attention or the ability to be attuned to some things while screening out others keeps an individual from being bombarded with information that is not relevant to current activity and from focusing too narrowly, ignoring important cues. Attentional regulation (sustain, focus, and shift) allows the individual to process the complexities needed to make adequate decisions or perform some tasks (see Rapid Reference 1.6).

Chronic affective states as conceptualized in temperament research are related to schema development. Emotions influence information processing by alerting the individual to emotion-relevant aspects of the environment and guiding the interpretations of those events. Negative emotional reactivity is associated with greater attention to negative events (Derryberry & Reed, 1994) and with perceiving those events as more aversive or stressful (Rothbart & Bates, 2006; Costa, Somerfield, & McCrae, 1996). Self-regulatory schemas measured with TAT stories showed that elementary school children with high negative emotional reactivity were more focused than those with average reactivity on the immediate short-term resolutions to tensions (Bassan-Diamond et al., 1995). Over time, negative emotionality contributes to the development of schemas that confer vulnerability to depression. However, schemas of individuals with chronic and non-chronic forms of depression are distinct (Riso et al., 2003). The schemas associated with chronic depression suggest impaired autonomy (low coping efficacy and view of environment as challenging) and hypervigilance (to one's mistakes or to departure from rigid performance expectations). Such schemas are consistent with the tendency of those with chronic depression to report a general malaise and dissatisfaction with life rather than to present clear-cut problems to be resolved.

Rapid Reference 1.7

Basic self-regulatory processes (of attention, emotion, and behavior) shape schema growth, operating directly, indirectly, bidirectionally, and hierarchically (see Teglasi, 2006): (a) *directly*—by guiding the information that enters awareness to be classified and organized; (b) *bidirectionally*—by influencing exposure to information by selective attention and selective approach or avoidance; (c) *reciprocally*—by the goodness of fit between the person and various environments (resources to meet demands) and by the responses the individual elicits from others (acceptance, support, harshness); and (d) *hierarchically*—by driving the mental representations of experiences as shaped by the foregoing direct, indirect, and bidirectional influences. Once developed, the schemas take their place among the variables that guide person by environment encounters.

Complaints about multiple life areas are difficult to resolve in piecemeal fashion and it is useful to conceptualize the various issues under a common theme of generalized maladaptive schemas (Riso, Maddux, & Turini-Santorelli, 2007).

A history of faulty information processing reinforces incomplete or distorted mental sets and interventions need to address the schemas (gaps or distortions), how they are used (selective processing of information), and the processes by which they developed and continue to be maintained (see Rapid Reference 1.7). Schema-related impediments contributing to maladaptive behaviors include cognitive distortions (e.g., biased interpretation of situations and intentions) and cognitive deficits (e.g., poor problem solving). As noted earlier, situations vary in the demands made for motivation and information processing (including for the regulation of emotion and attention). Therefore, dysfunctional schemas are often situation specific. Individuality and situation-specificity of schemas contribute to the heterogeneity of schematic processing difficulties within disorders such as anxiety and depression (Foa & Kozak, 1991; Greenberg, Elliott, & Foerster, 1991; Safran & Greenberg, 1988) that may be targeted for intervention (Goldfried, Greenberg, & Marmar, 1990; Shirk, 1998; Riso et al., 2007; Shirk & Russell, 1996).

EMPIRICAL FOUNDATIONS OF STORYTELLING TECHNIQUES

The empirical foundation of any instrument depends on its validity or capacity to measure what it purports to assess and to do so reliably. Validity and reliability are not established generically for the storytelling technique but demonstrated separately for each set of pictures, administrative procedure, and interpretive method.

Therefore, evidence supporting or disconfirming a specific approach to narrative assessment is the property of that particular method. Psychometric standards apply with equal rigor to every assessment strategy, whether reliant on questionnaires or performance tasks but, in their application, psychometric principles are tailored to the nature of the technique. Users of open-ended performance tasks depend on the establishment of valid and reliable criteria for coding and interpretation just as users of questionnaire techniques count on previously developed items and scales with demonstrated validity and reliability (see Cramer, 1996; Jenkins, 2008; Teglasi, 1993, 1998).

Construct Validity

Clarity about the construct that a test purports to measure is essential to its proper use. The idea of construct validity rests with the assumption that the phenomenon being measured such as "intelligence" exists in the real world, influencing responses to circumstances regardless of whether or not it is measured. This separation between constructs as real phenomena and measures as attempts to capture those phenomena acknowledges multiple possibilities for assessment of a construct and allows ongoing refinements to be made both to the construct and to its various measures. On the other hand, defining a construct as synonymous with a particular measure (i.e., operational definition) leaves little room for revising the construct. An example of construct refinement, discussed earlier in the chapter, is the formulation of *explicit* and *implicit* versions of psychological phenomena as distinct because of their differential influences on real-life behaviors. This advancement was enabled by the use of diverse measurement approaches for seemingly similar constructs that were eventually found to provide unique information. The notion that performance and self-report instruments are alternative measures of the same construct is no longer theoretically defensible. Likewise, low agreement by different informants on questionnaires raise questions about their equivalence across informants (De Los Reyes & Kazdin, 2005).

For a test to be valid (see Borsboom, Mellenbergh, & Van Heerden, 2004), the construct measured must refer to a "real" phenomenon that causes variation in responses in actual life settings and also causes variation in responses to the test. According to Borsboom and colleagues (2004), "validity" as a concept is distinct from "validation" as the activities to establish validity. A commonly used validation activity, the "multi-trait-multi-method" correlation matrix, has been used to tease apart variance due to methods and constructs (Campbell & Fiske, 1959). Although providing important information, this matrix does not directly address

the core issue of validity, the existence of an attribute, and its causal influence on real world and test responses. Evidence bearing on "validity" comes from knowledge of the causal influences exerted by the construct on item responses.

Construct "validation" refers to "an integration of any evidence that bears on the interpretation or meaning of test scores" (Messick, 1989, p. 17), including all forms of reliability and other indicators that a test measures what is intended. The evaluation of validation evidence must be in tune with the theoretical conception of the phenomenon in question. For instance, "intelligence" is real because it influences responses not only to the test items but also in real-life contexts. However, if intelligence tests are limited to highly structured items, then responses are generalizable only to similarly structured real-world contexts. In keeping with the emphasis of Borsboom and colleagues, patterns of convergences or divergences of various measures of aggression (multi-trait-multi-method matrix) would not inform validity without accounting for the influences of various aggression-related phenomena on responses to the various measures. These phenomena may include forms (overt and relational) and functions of aggression (proactive and reactive; see Card & Little, 2006) as well as implicit and explicit versions of the aggression construct (Frost, Ko, & James, 2007). In essence, the validity of constructs is not provided by tables of correlations but by substantive psychological theory.

Ascribing *validity* to the TAT for clinical use starts with the formulation of meaningful psychological constructs that are causally related to responses in the real world and to story construction. The categories for coding stories then must reflect current understandings of the construct. Accordingly, frequency counts of aggressive story content, even if reliable across raters, are of limited value in assessing the construct of aggression (see Teglasi, 1993, 1998) because they fail to take important distinctions into account such as the stimulus pull for aggressive content, intent of aggression, outcomes of aggression, as well as forms and functions of aggression. As explained in subsequent chapters, all content, including aggression, takes on meaning in reference to the eliciting pictured stimulus, evoking circumstances, intentions, and outcomes.

Developing and validating units for interpreting TAT stories also require careful attention to measurement issues such as the possible confounding influence of number of words or story length in some interpretive systems (e.g., Veroff, Atkinson, Feld, & Gurin, 1960). Two proposals to resolve this problem are the use of a correction factor for story length (e.g., Cramer, 1987; Murray, 1943; Winter, 1982) and the use of interpretive units that are not referenced directly to the words in the story but to underlying structures (Teglasi, Locraft, & Felgenhauer, 2008a, b).

Above all else, conceptual clarity should guide the evaluation of the evidence supporting the usefulness of a measure.

Face Validity

The concept of face validity refers to whether the "appearance" of a test is consistent with what it is designed to measure. Because the test taker does not know how the stories are to be interpreted, face validity is a matter of acceptability of the storytelling procedure on its "face." Telling stories about social scenes that depict tension does appear to be a "face valid" measure of social information processing. However, face validity, according to the Standards for Educational and Psychological Testing, is not an acceptable basis for drawing conclusions from a test.

Criterion Validity

Criterion validation of a measure includes activities to establish a correlation, concurrent or predictive, between the instrument and a designated set of criteria. However, since the same constructs are assumed to underlie variation in responses to the measure in question (e.g., TAT) and to criterion variables (real-life responses), it would seem logical that both would be subject to construct validation (Messick, 1989). Accordingly, a given performance measure would be understood in terms of its functional demands, and responses would be expected to generalize to other tasks and life situations only if they make similar functional demands (i.e., measure the same dimension of the construct). This emphasis on construct validity places equal value on prediction and explanation as fundamental to validation efforts. The need to distinguish between prediction and explanation is demonstrated by findings that TAT and self-report measures of achievement motivation both correlate with external criteria, but in different ways (discussed earlier).

Incremental Validity

An instrument has the property of incremental validity if it adds information to other measures in the battery by raising the overall correlation with the criterion (Mischel, 1968). An example of incremental validity is the prediction of grade point average (GPA) or job success from a combination of IQ and TAT scores, noting the contribution that each adds to the other. The more multiply determined and complex a criterion, the more important it is to account for the role of multiple constructs. The limitations of any single construct (and its associated measures) to explain functioning is evident in the frequent use of multiple assessment measures and the notion of "incremental validity," which refers to the capacity of a test to provide unique information to the prediction of a criterion

after controlling for contributions of other measures (Mayer, 2003). According to such a practical view of incremental validity, a test would be valued if it accounts for variance in a criterion not obtained by other instruments in a given battery. On the other hand, if incremental validity were rooted in construct validity, value would be placed on the unique contributions of constructs, as variously measured, rather than on single instruments. In other words, the practical question of which tests should be selected would be transformed to the question of which constructs are pertinent to a given phenomenon, what are the unique contributions of each construct to variance in that phenomenon, and what are the best ways to measure each construct? Emphasis on construct validity would allow incremental validity activities to independently consider the adequacy of the constructs and of their measures as both predictor and predicted variables. The overriding question would be about the nature of the constructs that underlie variation in the predictor and the predicted variable.

Content Validity

The content validity of thematic apperception techniques may refer to picture stimuli or to the interpretive units. Regarding picture stimuli, content validity refers to sufficiency of sampling thematic domains (e.g., types of relationships, emotions, or situations), whereas the content validity of the interpretive strategy concerns the adequacy of the coding units applied to narrative content to measure the phenomenon under consideration (e.g., object relations).

Conceptual Validity

Whereas construct validity and incremental validity connect measures and constructs across individuals, "conceptual validity" (from Maloney & Ward, 1976) centers on patterns within single individuals. The formulation of a *case conceptualization* yields hypotheses about how an individual has arrived at a particular stance toward life at a given point in his or her development. Given that similar outcomes may be traced to different causal pathways (equifinality) and different outcomes may be caused by similar factors (multifinality; Cicchetti & Rogosch, 1996), the case conceptualization is not a simple matter. It is not possible to consult a list of specific risk or protective factors in persons or environments to anticipate certain outcomes for all individuals, and similar behaviors in a given setting are explained by different causes. Therefore, a case conceptualization is basically a procedure to fashion a working model of the individual's ongoing interactions with various contexts and the growth of schemas synthesizing those interactions. In so doing, an exclusive focus on documenting behavioral variations across settings (as in functional behavioral analysis) is limited because it does not include procedures to examine causal influences beyond the immediate circumstances (Haynes

& O'Brien, 1990). Likewise, assessments that are narrowed to descriptions of diagnostic symptoms do not consider other characteristics of the individual such as coping resources and do not clarify the mechanisms by which a given disorder (e.g., anxiety) limits functioning.

Conceptual validity of a case formulation is grounded in procedures that yield causal hypotheses for the relevant phenomena by examining information about individuals' current and prior interactions contributing to the presenting concerns. Regardless of the theoretical orientation guiding the professional's views on assessment or intervention, the case conceptualization takes into consideration the heuristic that behavior is a function of the person, environment, and the dynamics between them (Lewin, 1935). Individual functioning in current contexts is informed by what has been learned (schemas) in previous encounters. Due to their impact on how individuals interact in their current contexts, schemas are considered important targets of intervention (e.g., Shirk & Russell, 1996), and both implicit and explicit schemas need to be addressed (Dowd, 2006).

Reliability

The general concept of reliability in psychological assessment refers to the attribute of consistency in measurement.

Rater Reliability

The product of storytelling is an open-ended response that requires interpretive judgment and documentation of the reliability of that judgment. Interrater reliability addresses the question of whether the interpretive procedure applied by different raters to identical responses yields the same result. Interrater reliability for thematic techniques tends to be high when interpretive criteria are clearly designated and interpreters are well trained in the rating procedure (Karon, 1981). Under such conditions, agreement calculated between two (or more) raters or a rater and a set of practice materials scored by an expert often exceeds the .80 to .85 range, which is generally considered adequate (Lundy, 1985). With training and practice, interrater reliability in each of the coding parameters described in this book is .80 or higher (Blankman, Teglasi, & Lawser, 2002; Teglasi, Locraft, & Felgenhauer, 2008a). Clear criteria and adequate training reduce the bias by differential experience of the interpreter and by variation in values or assumptions about what responses reflect (see Jenkins, 2008). Though not generally reported in the literature, in clinical use, it may be important to establish the reliability of a single rater over time.

Decisional Reliability

Another way of evaluating the reliability across raters is to examine the agreement in global judgments or decisions derived from the protocol rather than focusing on specific units. This form of reliability more accurately reflects the clinical use of the TAT, where clinicians apply their knowledge of research and theory to draw conclusions. One problem is that professionals with different theoretical foci tend to emphasize different aspects of the protocol. However, Shneidman (1951) demonstrated that 16 clinicians using their own methods came to similar conclusions. An important influence on reliability of decisions relates to the number of performance samples or cards administered. For a reliable assessment with the TAT, it has been recommended that clinicians obtain at least six stories from each respondent (Lundy, 1985; Smith, 1992).

Test-Retest Reliability

Two important considerations in documenting reliability upon retesting are (a) whether the focus is on similarity of story content or similarity of the clinician's judgment (Karon, 1981), and (b) whether the personality construct under consideration is relatively stable or fluctuating (Cramer, 1996). The reliability of the specific content is less relevant than consistency of the interpretive meaning of the response with the passage of time. Moreover, given that personality may be subject to change, the time interval between testing and retesting is crucial, and the degree of consistency must be viewed in light of data and theory about expected change in the particular unit on which reliability is sought. Structural characteristics of TAT stories tend to remain stable (at least in the short term) as shown by test-retest correlations (Locraft & Teglasi, 1997).

Internal Consistency

Items of a test measuring a particular construct are expected to correlate with each other. The higher the

CAUTION

The terms *objective* and *projective* imply that the former is less subjective. However, as George Kelly (1958) points out, both objective and projective methods have subjective elements, though they occur in different parts of the assessment process: Reliability of items on a rating scale is essentially a matter of consistency in the respondents' interpretation of questions, whereas reliability of inferences based on thematic apperceptive methods rests on a combination of the stimulus, the response, the method of interpretation, and the skill of the interpreter. Meyer and Kurtz (2006) offer editorial guidelines for authors submitting manuscripts to the *Journal of Personality Assessment* to shift away from use of the terms projective and objective.

correlation among the items as indicated by coefficient alpha, the more consistently each item measures the construct under consideration. Split-half reliability (in which scores on one half of the test such as odd and even items are correlated with the other) is another way of estimating the internal consistency. When documenting internal consistency of the TAT, each picture is considered as one item. The number of TAT stories obtained may not be sufficient to establish split-half reliability. A more general problem concerns all approaches to internal consistency in TAT type measures. Given that the pictures are designed to elicit different themes (Morgan & Murray, 1935), it would be inappropriate to rely on story content to establish internal consistency (Lundy, 1985). Indeed, with respect to thematic content, the TAT does not meet the tenets of classical psychometric theory because test-retest reliabilities have been higher than measures of internal consistency (alpha coefficients)—a pattern that is contrary to traditional psychometric assumptions (Lundy, 1985). However, consistency of structural variables, not influenced directly by the picture, is conceptually defensible and seems acceptable (Atkinson, Bongort, & Price, 1977). Internal consistency appears to be high with structural or formal qualities of the story, such as the accuracy of the match between the story and the stimulus or the degree of cohesiveness among story details (Blankman, Teglasi, & Lawser, 2002; Teglasi, Locraft, & Felgenhauer, 2008a).

TEST YOURSELF

1. **The Rorschach is primarily a test of perception, whereas the TAT is a test of apperception.**
   True or False?
2. **Historically, criteria for coding stories have been most clinically useful if**
   (a) they were narrowly specified and psychometrically validated.
   (b) they provided broad interpretive guidelines.
   (c) both "a" and "b."
   (d) neither "a" nor "b."
3. **Schema theory supports the following assumptions that are central to the "projective hypothesis":**
   (a) importance of previously organized "sets" for the interpretation of current experience.
   (b) importance of mental processes that operate outside of awareness.
   (c) both "a" and "b."
   (d) neither "a" nor "b."

(continued)

4. Knowledge structures or schemas organize information that is

(a) independent of the knower and amenable to public verification.
(b) limited to the knower and not amenable to validation by logical analysis.
(c) both "a" and "b."
(d) neither "a" nor "b."

5. TAT stories may constitute

(a) a replay of actual experiences.
(b) ideas borrowed from the media.
(c) abstractions synthesized from life experiences.
(d) all of the above.

6. Storytelling is useful to assess schemas and social problem-solving strategies in

(a) highly familiar scripted situations.
(b) novel, stressful, complex, or emotionally charged situations.
(c) both "a" and "b."
(d) neither "a" nor "b."

7. Dual theories of information processing contrast

(a) the "experiencing" self, influenced by emotion, and the verbally defined self.
(b) emotion-driven thinking and rational analytic mode of thinking.
(c) narrative thought and propositional thought.
(d) all of the above.

8. Individual differences in emotional, cognitive, and attentional processes influence the development of schemas.

True or False?

9. All reliability and validity evidence may be subsumed under the rubric of construct validation.

True or False?

10. Storytelling and self-report measures may be used interchangeably.

True or False?

11. Documenting the psychometric qualities of the TAT is complicated by

(a) the need to establish validity and reliability for each interpretive method.
(b) the need to demonstrate reliability for each rater.
(c) both "a" and "b."
(d) neither "a" nor "b."

Answers: 1. True; 2. b; 3. c; 4. c; 5. d; 6. b; 7. d; 8. True; 9. True; 10. False; 11. c.