Model-Based Approaches for Teaching and Practicing Personality Assessment

Mark A. Blais & Christopher J. Hopwood

Published online: 08 Jul 2016.

Submit your article to this journal

Article views: 123

View related articles

View Crossmark data

Citing articles: 3 View citing articles

Routledge
Taylor & Francis Group

SPECIAL SECTION: TEACHING, TRAINING, AND SUPERVISION IN PERSONALITY AND PSYCHOLOGICAL ASSESSMENT

Model-Based Approaches for Teaching and Practicing Personality Assessment

Mark A. Blais[1] and Christopher J. Hopwood[2]

[1]Psychological Evaluation and Research Laboratory (PEaRL), Massachusetts General Hospital and Harvard Medical School; [2]Department of Psychology, Michigan State University

ABSTRACT

Psychological assessment is a complex professional skill. Competence in assessment requires an extensive knowledge of personality, neuropsychology, social behavior, and psychopathology, a background in psychometrics, familiarity with a range of multimethod tools, cognitive flexibility, skepticism, and interpersonal sensitivity. This complexity makes assessment a challenge to teach and learn, particularly as the investment of resources and time in assessment has waned in psychological training programs over the last few decades. In this article, we describe 3 conceptual models that can assist teaching and learning psychological assessments. The transtheoretical model of personality provides a personality systems-based framework for understanding how multimethod assessment data relate to major personality systems and can be combined to describe and explain complex human behavior. The quantitative psychopathology—personality trait model is an empirical model based on the hierarchical organization of individual differences. Application of this model can help students understand diagnostic comorbidity and symptom heterogeneity, focus on more meaningful high-order domains, and identify the most effective assessment tools for addressing a given question. The interpersonal situation model is rooted in interpersonal theory and can help students connect test data to here-and-now interactions with patients. We conclude by demonstrating the utility of these models using a case example.

No matter how helpful a clinical tool it may be, a psychological test cannot do its own thinking. What it accomplishes depends upon the thinking that guides its application. This guiding thought is psychological theory, whether explicit and systematized or implicit and unsystematized.

—Schafer (1954, p. xi)

The ability to integrate multisource information into a coherent description of a person suitable for explaining or predicting complex behavior is a core competency in psychological assessment (Handler & Meyer, 1998; http://www.apa.org/ed/graduate/benchmarks-evaluation-system.aspx). However, achieving proficiency is challenging for students, as it takes more than knowledge of assessment instruments and measurement theory. Students can benefit from an explicit model or understanding of personality and psychopathology and knowing how assessment findings relate to these constructs (Lerner, 1998; Schafer, 1954). A conceptually guided approach improves the integration of data, highlights gaps or contradictions within data, and enhances the descriptive and predictive power of assessment findings (Sugarman, 1991). Without the aid of a conceptual framework, the assessment process risks being overly focused on test scores, instruments, or psychiatric conditions while losing sight of the person and his or her unique context. In sum, combining assessment data with an explicit conceptual model is critical for teaching, learning, and practicing assessment in a manner that captures human complexity.

Conceptual models can be particularly useful for trainees who are often overwhelmed by the magnitude and complexity of the assessment process. Models help trainees link findings to a common framework, develop strategies for generating and testing hypotheses about the patient's functioning or condition, protect against common cognitive errors like confirmation bias and selective use of data (Cook & Smallman, 2008), and offer a language for communication with supervisors, clients, and other professionals. Using model-based approaches in teaching assessment has additional advantages. Integrating a conceptual model into an assessment seminar decreases the focus on specific instruments, reducing the potential for test–test competition; linking multiinstrument data (a test battery) to aspects of a model highlights cross-test similarities, while acknowledging that all tests have limitations; and placing assessment training within a conceptual framework connects it more broadly to psychological science.

In this article, we describe three conceptual models that can be useful in the training of assessment psychologists, each of which has a slightly different focus and purpose. Although each model overlaps to some degree and has a variety of purposes, each has a specific strength. The transtheoretical model of personality is particularly useful for integrating multimethod assessment data; the personality trait hierarchy model can be used to develop evidence-based explanations for diagnostic findings; and the interpersonal situation model can be used to connect test findings to here-and-now interactions with clients.

The transtheoretical model of personality

Mayer's (1998, 2005) systems framework describes the major subdivisions of personality as well as the organization and

CONTACT Christopher J. Hopwood ✉ hopwood2@msu.edu ✉ Department of Psychology, Michigan State University, Psychology Building, 316 Physics-Room 107A, East Lansing, MI 48824.

dynamics of personality development. His model is generic and can be modified to fit the needs of applied domains such as clinical assessment. Guided by Mayer's framework, Blais and colleagues have developed a model of personality specifically intended for use in psychological assessment (Blais & Hopwood, 2010; Blais & Smith, 2014).

The transtheoretical model of personality (TTMP; Figure 1) divides personality into five structures: (a) self-awareness and regulation, (b) thinking and information processes, (c) affect regulation, (d) identity, and (e) interpersonal and social orientation. Each structure is associated with a specific psychological function. The model identifies both implicit and explicit personality functions and illustrates the dynamic interrelationships among personality structures that underlie complex human behavior. Most important for teaching and learning psychological assessment, the TTMP explicitly relates multisource assessment data to these five primary personality domains. This process clarifies how assessment data inform the clinician regarding the major features of personality and facilitates integration of data from traditional personality instruments with information from more basic areas of psychological, cognitive, and neuroscience research.

Thinking system

The thinking system is responsible for the perception of external and internal stimuli and the interpretation of these perceptual experiences. The primary goal of the thinking system is to generate information and knowledge that helps us understand and act effectively in and on the world. A psychological assessment battery yields considerable data relevant to thinking: perceptual accuracy, quality of associations (logic and goal-directedness of thinking), control (attention and concentration) and clarity of thought, problem-solving ability, range and depth of knowledge, and prominent thought content.

Affect system

The affect system functions to process, modulate, and express emotions. Emotions provide a rapid broadband evaluation of the environment while also predisposing individuals for specific behavioral responses (Barrett, Mesquita, Ochsner, & Gross, 2007). Although feelings (i.e., moods) are

experienced consciously, much emotion processing precedes conscious perception (Surakka, Tenhunen-Eskelinen, Hietanen, & Sams, 1998). Multisource psychological assessment data can help describe this complexity of emotional experiences, in addition to identifying specific mood disorders (e.g., depression and bipolar disorder) and the propensity for mood dysregulation (e.g., negative affectivity, affective instability).

Dynamic interactions between the thinking and affect systems

The thinking and affect systems interact dynamically and bidirectionally to modify each other and shape our understanding of inner and outer experience (Davidson, Pizzagalli, Nitschke, & Putnam, 2002; Johnstone, Reekum, Urry, Kalin, & Davidson, 2007). Adaptive functioning requires an integration of thinking and feeling, but individuals differ in their "thinking to feeling" ratio and how smoothly they blend together these distinct personality functions. Psychological assessment data, such as indicators of affective interference of memory on intelligence tests or of other aspects of cognition on perception tasks, can capture this dynamic interplay.

The personality systems in the TTMP represent hypothetical constructs thought to exist within the human mind that, through their dynamic interaction, give rise to personality and behavior. External expression of personality provides the means for connecting our inner, biological systems with the outer social systems (Mayer, 2005). Locating personality at the intersection of our biological and social worlds gives us insight into another primary role of personality: interpersonal functioning. Personality developed in part to mediate between our internal or evolutionary needs and external social or environmental forces and constraints (Buss, 2001). The next two personality systems contain the functions needed for effective interpersonal and social interactions.

Self system

The self system generates our sense of identity and helps answer such questions as "Who am I?," "What is my purpose in life?," and "Am I a good person?"(Campbell, Assanand, & Paula, 2003). One's sense of identity can vary along the dimensions of complexity, affective tone of self-referents, stability, and continuity over time (Campbell et al., 1996). Assessment of autobiographic narratives and early memories can also be of value in assessing self-image and identity (Ackerman, Fowler, & Clemence, 2008).

Interpersonal system

The interpersonal system contains the psychological processes that support our ability to accurately judge the actions and intentions of others and maintain smooth reciprocal relationships. The interpersonal system determines the importance (ranging from indifference to primary importance) and general tone (helpful or unhelpful, scary or inviting) of our relationships and social interactions. The interpersonal system also helps us organize our interpersonal behaviors into a recognizable style. This characteristic interpersonal style is often measured along the Five-Factor Model
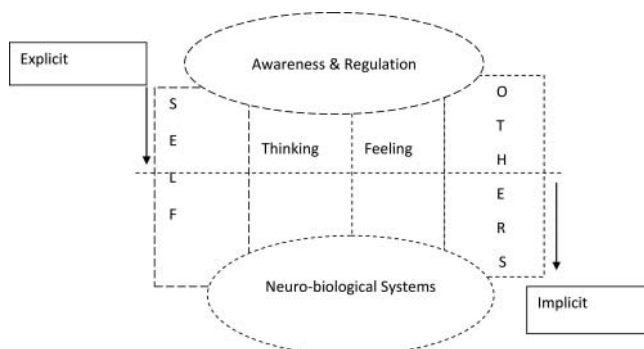

Figure 1. Transtheoretical model of personality.

(Goldberg, 1993) dimensions of agreeable–disagreeable and introversion–extraversion or the dominance and warmth axes of the interpersonal circumplex (Wiggins, 1991).

Dynamic interactions between the self and interpersonal systems

Theorists such as Sullivan (1953), Kernberg (1996), and Fonagy (Fonagy & Bateman, 2006) have emphasized the interconnectedness of the self and interpersonal systems. The self and interpersonal systems develop or mature in unison, achieving roughly equal influence in the overall organization of personality. However, in many pathological conditions, either the self or interpersonal system becomes overly influential and dominates personality functioning. Blatt (see Blatt, Besser, & Ford, 2007) outlined the role of anaclitic (relational focus) and introjective (self-focus) pathologies from the psychodynamic perspective, whereas other theorists (Beck, 1983; Robins & Luten, 1991) identified similar concepts (sociotropy and autonomy) from the perspective of cognitive behavioral theory. A number of measures, particularly of a dynamic variety (e.g., ambulatory assessments; see Wright & Hopwood, in press), can be useful for assessing the interplay between the self and interpersonal systems.

Self-awareness and regulation system

The final TTMP personality system is envisioned as an overarching regulator of the other systems. This system is responsible for ongoing self-evaluation, regulation, and goal modification. This personality system actively monitors the inner and outer environments to adjust and regulate behaviors and goals according to ongoing feedback. This personality system has been referred to as insight, psychological mindedness, emotional intelligence (Slovey, Mayer, Goldman, Turvey, & Palfai, 1995), and metacognition (Koren, Seidman, Goldsmith, & Harvey, 2006). The goal of this system is to accurately evaluate our actions, prioritize our motivations and goals, and anticipate future needs or threats.

Using the TTPM in training

The TTPM is of particular value to trainees presented with assessment data from multiple methods, especially when those assessment data do not seem to tell the same story. For example, self-report and performance-based assessments might not align in an assessment case, such as when a client reports minimal distress on a questionnaire but distress is evident in his or her performance-based test scores. Such situations can be confusing for students and might lead them to simply rely on one test and disregard the other, despite broad evidence that both instruments are valid. The TTPM would encourage a trainee in such a situation to consider how this pattern reflects dynamics at the interaction of the thinking and feeling systems, such as the possibility that the client is motivated to avoid the experience of distress, which nevertheless influences his or her behavior at levels outside of his or her awareness. From this point of view, both instruments are providing valuable information that can be integrated into a holistic formulation of patient functioning (Bornstein, 2002).

The personality-psychopathology trait hierarchy

The trait psychology approach to understanding individual differences has had an enduring influence on personality assessment (Cronbach, 1957). This tradition (Cattell, 1943; Digman, 1997; Eysenck, 1950; Goldberg, 1993) emphasizes factor analytic approaches to organizing personality variance into meaningful units. For decades, a central question in this tradition was how many traits there are. Cattell famously proposed 16, Eysenck proposed 3, and many contemporary theorists have settled on 5 (McCrae & Costa, 2003; Wiggins, 1996). Hierarchical approaches have recently provided an avenue for reconciling these different perspectives (e.g., Wright et al., 2012). Trait hierarchies allow for the fact that there are very broad traits that depict individual differences in general personality tendencies, for example in terms of overall adaptability, as well as narrower traits that depict specific personality variance, such the tendency to become orderly and compulsive versus impulsive and reckless under stress. Narrower traits are viewed as specific variants related to higher order dimensions. For instance, obsessionality might be thought of as a facet at the intersection of the broader traits (low) disinhibition and negative affectivity.

Adapting hierarchical trait models for teaching psychological assessment has many advantages. Chief among these is a solid empirical foundation for assessment. The increased emphasis on teaching evidence-based treatment procedures that focus on specific diagnostic categories has in part been seen as leading to the diminished role of assessment in graduate school training (Ready & Veague, 2014). Teaching psychological assessment based on a model derived from the quantitative study of psychopathology might slow or reverse this unfortunate trend, because diagnostic categories have rather limited validity from an assessment perspective and tend to focus the assessor away from a comprehensive personality assessment. Furthermore, learning to organize assessment data into a hierarchical model would offer assessment students valuable insights into psychopathology, research methods, and measurement theory.

Figure 2 depicts a generic hierarchical model of personality based on a variety of studies examining the covariance of
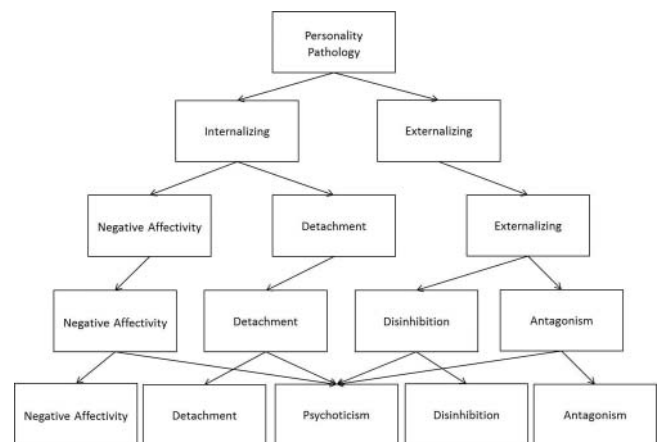

Figure 2. Personality and psychopathology trait hierarchy. *Note.* Reprinted from Hopwood et al. (2015) with permission from Guilford Press. This figure is based loosely on the Wright et al. (2012) examination of the *Personality Inventory for DSM–5*. This hierarchy here extends downward from the level of five domains to depict narrower trait facets.

normal and abnormal personality and psychopathology (e.g., Markon, Krueger, & Watson, 2005; Wright et al., 2012; see also Hopwood, Zimmermann, Pincus, & Krueger, 2015). At the top of the hierarchy is a broad trait of general adaptability, or personality problems. At the next level this broad predisposition splits into internalizing and externalizing aspects of personality dysfunction. At the third level, reminiscent of Eysenck's three-factor model, internalizing splits into negative affectivity and introversion. At the fourth level, externalizing splits into antagonism and disinhibition. The familiar Big Five emerge at the fifth level of the hierarchy. This hierarchy continues downward, for instance to a level perhaps similar to Cattell's 16, the 30 facets of the NEO Personality instruments, or the scales of various pathological trait instruments. Importantly, a relatively similar hierarchy emerges whether normal or abnormal questionnaire data are factor analyzed, suggesting that this trait hierarchy integrates the variables commonly studied in basic personality science with the symptoms described in psychopathology taxonomies (Blais, 2010; Krueger & Markon, 2014; Markon et al., 2005).

Moreover, covariance models of syndromal disorders (e.g., mood, anxiety, and substance use disorders) also show a hierarchical structure that is highly similar to Figure 1 (Wright & Simms, 2015). In other words, factor analytic methods are not just capable of organizing normal and abnormal personality features into more coherent units, but most of the individual differences of interest in clinical psychological assessment can also be organized (and reduced) using these models. Furthermore, the National Institute of Mental Health Research Domain Criteria (RDoC; Insel et al., 2010) dimensions, developed to capture the basic units of brain functioning and improve research on psychopathology, bear some resemblance to the Big Five level of the hierarchy (Harkness, Reynolds, & Lilienfeld, 2014; Patrick & Hajcak, in press). As such, employing empirical models to teach and learn assessment offers a path for increasing the acceptance and influence of assessment findings in practice and research. For example, organizing data from personality and psychopathology instruments around empirically identified domains streamlines data integration and improves interpretation, because the data are reorganized into fewer variables and the reconceptualized variables have stronger associations to the broad domains of psychopathology and personality. Treatment planning is also enhanced, as the dimensions of the hierarchy are more directly related to etiology, impairment, and course than traditional disorder categories. In this way, quantitative research on the course and cause of psychopathology can be directly translated for application in clinical assessment (Harkness et al., 2014; Krueger & Markon, 2014).

Using the trait hierarchy in training

Adapting a quantitative model to assessment training improves students' understanding of applied nosology by addressing two widely criticized features of the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed. [*DSM–5*]; American Psychiatric Association, 2013): *comorbidity*, the tendency for patients to have more than one diagnosis, and *heterogeneity*, the tendency for two patients with the same diagnosis to be different from one another in clinically important ways. These problems can be very confusing to a trainee who is trying her or his best to derive the "correct" diagnosis. Both of these problems are addressed by reorganizing assessment data into the trait model hierarchy. Comorbidity can be explained by the fact that individuals vary in broad tendencies. For instance, an individual who is high in internalizing is prone to depression, anxiety, anger, and impulse problems (Kotov et al., 2011). Heterogeneity can be explained by the fact that individuals with the same index diagnosis can have relatively different trait profiles. These personality differences can have important clinical implications. For example, Thomas et al. (2014) showed that whereas individuals with posttraumatic stress disorder (PTSD) who were high in interpersonal dominance remitted, on average, in about 5 years of an initial assessment, it took 10 years for the average individual with PTSD who was low in warmth and dominance to remit. Interpersonal dominance is not a diagnostic characteristic of PTSD, and thus individuals with PTSD vary on this trait. The Thomas et al. study demonstrated that an assessment of interpersonal dominance provides important information that would be missed if an assessment were constrained to a diagnostic evaluation of PTSD alone. Thus, a model like Figure 2 could be used to organize current diagnostic information in a manner that would be more evidence-based and more clinically useful (Krueger & Markon, 2014), and offer trainees a more productive way to think about data and real clients.

Trait hierarchies can be also useful for trainees in determining how to assess clients. An important consideration in selecting assessments involves the relative breadth of the measure, given the assessment question. In screening situations, relatively broad but brief assessments are used, with the goal of identifying individuals who might have some characteristic. The clinician tasked with screening a relatively large population of individuals for psychopathology would be wise to choose a few of the most reliable and sensitive items from several broad domains, such as negative affectivity, antagonism, and disinhibition. It would be less effective to only ask questions about negative affectivity, given that some disinhibited individuals might engage in problematic externalizing behavior that would be missed by such a screening (although this is often done in practice, for instance, by clinicians who track transdiagnostic patient progress using a single measure of depression). However, a broad screening approach would have little value for developing a highly idiographic formulation of a therapy case. The clinician or trainee in this situation would be wise to use tools that focus on the lower levels of the hierarchy to ensure that meaningful units are assessed, so as to avoid missing important information. Figure 2 provides a principled framework for making these kinds of decisions in an assessment context, which can help supervisors and trainees balance efficiency with comprehensiveness in the assessment of individual cases. Finally, adopting a trait hierarchy model to teach and guide psychological assessment highlights how traditional assessment tools and data converge with modern quantitative models of psychopathology, bringing clinical assessment into contact with emerging research in psychopathology.

The interpersonal situation

The goal of many personality assessments goes beyond the description of client attributes. Clinicians use personality assessments to develop a more empathic understanding about how patients move through their world and to make predictions about how patients will relate to others, including the therapist, in here-and-now interactions. This can be one of the more challenging aspects of assessment for trainees, who might be more comfortable formulating cases based on test scores with their supervisors than using their relationship with clients to understand and make use of those scores. Sullivan (1953) organized his personality theory around the interpersonal situation, or the here-and-now parameters, contextualized by developmental influences, that are relevant for understanding personality dynamics as they unfold with others. Recently, Hopwood, Pincus, and colleagues (Hopwood, Wright, Ansell, & Pincus, 2013; Hopwood et al., 2015) have developed a model based on Sullivan's conception and tethered to evidence-based dimensions of personality functioning for the purpose of connecting personality assessment data with clinical interactions (Figure 3).

Following Sullivan (1953), an organizing principle underlying Figure 3 is that personality is understood as an interaction between a self and an other, who can range from a proximal person in a real interaction to a mental representation (Pincus, Lukowitsky, & Wright, 2010). The idea is that our personalities are always expressed in relation to some object. Within the self and other are two important systems (Pincus, 2005), the self system and the affect system.

Self system

The self system involves identity, motives, and self-concept, and is arranged around the metaconstructs agency and communion (see Beck, 1991; Blatt & Luyten, 2009; Robins & Luten, 2009, for similar models). Individuals tend to be organized around some combination of agentic (powerful, successful) and communal (connected, affiliative) motives in any given situation, and tend to organize their experiences around the satisfaction of these motives. To the degree to which their situations and behaviors match their inner experiences and motives, individuals tend to have well-regulated and functional identities and self-concepts.

Affect system

The affect system involves emotional experiences, which are arranged according to Russell's two-dimensional model of arousal (activated to calm) and valence (positive to negative; Posner, Russell, & Peterson, 2005). Affect dysregulation in the form of emotional instability, impulsivity, or intense negativity is often a marker that something in the interpersonal situation is awry. The affect and self systems are typically connected as situations unfold (e.g., as a person's self-concept diminishes he or she might feel upset), as depicted by the arrow between them in Figure 3. Of course, both self and other have both self and affect systems. Diagnostically, the focus is typically on the dynamics of these systems within the self (i.e., the client), although the dynamics of the other (e.g., the clinician) are also often important.

Interpersonal field

A third system in interpersonal theory (Wiggins & Trapnell, 1996) is the interpersonal field, or the actual transactions that occur between self and other. These transactions can be organized around the interpersonal circumplex (Wiggins, 1991), insofar as most interpersonal behavior can be understood as reflecting some blend of dominance versus submission and warmth versus coldness. Disruptions in the interpersonal field (i.e., ruptures; Safran & Kraus, 2014) are common in life and clinical settings and often a focus of clinical attention. Interpersonal theory provides the concept of complementarity (Sadler, Ethier, & Woody, 2011), or the observation that dominance is usually met with reciprocal submission and warmth with similar warmth, as a baseline framework for evaluating the adaptiveness of interpersonal transactions.

Perception

Finally, for interpersonal interactions to go smoothly, both parties need to perceive the situation relatively accurately. Sullivan offered the concept of *parataxic distortion*, or the tendency to misperceive some aspect of interpersonal situations for developmental or psychological reasons, as a central difficulty in psychopathology. Many theories of personality and psychotherapeutic traditions likewise focus on misperception of self and others as a core problem. In Figure 3, the arrows depict the degree to which individuals perceive the other (straight arrows) and themselves (curved arrows) accurately.

Figure 3. The interpersonal situation.

Dynamic interactions

Like object relations models (Kernberg, 1996; Winnicott, 1965), the interpersonal perspective views personality through the lens of dynamic interpersonal transactions that involve a self, an
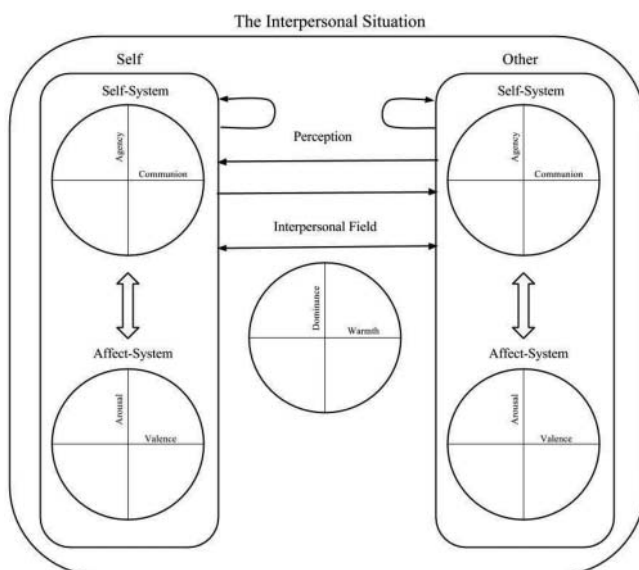
other, and a linking affect. Following dynamic models such as Mischel and Shoda's (1995) cognitive-affective processing system (CAPS), there is a strong assumption that personality features change dynamically and according to situations. However, unlike relational or CAPS models, the interpersonal situation provides a specific evidence-based framework for depicting how individuals will vary that can be connected directly to available assessment tools. This is because the variables in Figure 3 have clear connections to the trait tradition (Hopwood et al., 2015): Dominance involves the interpersonal aspects of extraversion; warmth involves low antagonism; negative affective valence aligns with trait negative affectivity; and arousal involves the affective elements of extraversion. These connections are made explicit through the use of the interpersonal and affective circles, which are evidence-based schemes for categorizing interpersonal behaviors and affective experiences with known empirical connections to personality traits as well as long histories as models for understanding dynamic personality processes. These connections to different personality traditions allow Figure 3 to be used by people with different preferences and backgrounds, and provides an integrative connection among psychodynamic, experimental, and trait traditions that have historically been antagonistic (Hopwood et al., 2015).

The interpersonal situation model consequently provides a theoretically integrative and practically manageable framework for translating test data into the rich experiences that occur in the consulting room. For instance, Hopwood et al. (2013) described how the interpersonal situation can be used to organize the fundamental difficulties in personality pathology, dysregulation and distortion. *Dysregulation* can occur in any of the three personality systems involved in interpersonal situations. Examples of self dysregulation include conflicting motives, failure to meet goals, or severe shifts in self-esteem as a result of perceived failure or criticism. Affect dysregulation involves highly negative or variable affects. Interpersonal behaviors that do not provide for the mutual satisfaction of interpersonal and emotional goals for both people in the interaction exemplify field dysregulation. *Distortion* can occur when someone misperceives his or her own behavior or experience (e.g., defensiveness) or when someone misperceives someone else (e.g., projection).

Using the interpersonal situation in training

There are two broad advantages to using the interpersonal situation model in a training context. First, it can facilitate the organization of assessment data into clinical formulations. Various assessment constructs have different kinds of implications for interpersonal situations. For example, a diagnosis like depression suggests a general tendency to experience low arousal, low valence emotions, and problems with self-concept involving worthlessness and disconnections from others. In Figure 3, this might be depicted as a tendency toward the bottom left of the self and affect circles. Depression is also likely to be associated with more negative perceptions of one's self than others. A construct like borderline personality, in contrast, implies vacillation in the self system, affect system, and interpersonal field, as well as markedly distorted perceptions of both self and other.

Second, the model can be used to help trainees understand how maladaptive interpersonal processes play out in real interactions, and particularly in close relationships and psychotherapy (Pincus & Hopwood, 2012). For instance, a paranoid patient might tend to see others as colder than is the case (other perception problem), which might threaten the communal aspects of his or her self system, which could lead to negative affects and cold interpersonal behavior, which might be experienced by others as aversive, cause them to experience negative affects, and result in them being cold. Such a cycle would reflect, in psychodynamic terms, a projective identification, as the other has come to behave in accordance with the self's projection. The interpersonal situation provides a framework for unpacking these kinds of processes by connecting test scores to the trainee's here-and-now experience of interacting with the client, which can be highly useful in the consulting room.

Case example

In what follows we briefly present a case that highlights the general advantages of organizing clinical assessment around evidence-based heuristic models and demonstrates the specific value of each of the three models we reviewed in this article. Christina was a second-year graduate student on her first assessment rotation in her PhD program. She was referred the case of Gerry, a 55-year-old business executive who had been single for 15 years after a 15-year marriage that ended when he was caught having an affair. Following his divorce, he focused most of his attention on his work, although he also had romantic relationships with multiple women during this time. He had three children from his marriage, all of whom lived with their mother until they moved out of the house. Each of Gerry's children was developing normally and had a good relationship with him, although they were clearly closer to their mother, and he did have some regrets about not spending as much time with them as he could have.

Gerry presented for an assessment saying that he felt as though he needed to begin to chart a new path for the next phase of his life. Although he felt relatively "happy" and considered himself successful, he knew that his work would need to slow down, and he desired a more stable companionship than he had been able to achieve following his divorce. He emphasized that life was still going well, but said he was starting to worry about "what it is all for," and wanted help "before it is too late." He had a long history of sleep disturbance and was beginning to worry about his ability to control his drinking. He also said he was worried about his memory, which had been failing him at times recently. He said it was "probably just old age," but also reported a history of dementia in his family.

Christina experienced Gerry as affable and charming, and had a generally positive impression of him. He presented in a manner that was professional but engaging; his eye contact and general comportment were appropriate. However, she also noted that he seemed to be a little callous and grandiose at times, and was having trouble integrating these different experiences of him. For instance, he made some oblique comments that seemed to be somewhat dismissive of psychology and held himself with an air of superiority. Her most prominent experience was her concern about the possibility that he might have an emerging memory disorder, and having been taught about the complexity of assessing these kinds of problems before

strong symptoms emerge, she felt a lot of pressure to get this aspect of the assessment "right."

Test data

Christina and her supervisor decided, based on Gerry's presenting concerns, to administer a battery of intelligence and memory tests including the Wechsler Adult Intelligence Scale (Wechsler, 2008) and the Wechsler Memory Scale (Wechsler, 2009), the Personality Assessment Inventory (PAI; Morey, 1991), the Thematic Apperception Test (TAT; Murray, 1943), the Rorschach Inkblot Method (Exner, 2003; Rorschach, 1927), and several interpersonal circumplex inventories. Gerry's current girlfriend also agreed to complete some questionnaires about him, and he agreed to participate in a 2-week ecological momentary assessment (EMA). This EMA evaluated instances of memory problems as well as each of the parameters in the self, affect, and field systems in the interpersonal situation, including self-esteem, self-worth, affective valence, affective arousal, self-dominance, self-warmth, other dominance, and other warmth, on a scale ranging from 1 to 7 for each meaningful interaction over 2 weeks (see Hopwood, Pincus, & Wright, in press). The assessment was framed around two questions that were developed collaboratively between Christina and Gerry: "What can I do to find meaning in the next stage of my life?" and "Should I be concerned about my memory problems?"

This approach to assessment covers all of the bases of Figure 1. As Blais and Hopwood (2010) discussed, the PAI and the Rorschach have scales that depict variation in self, other, affect, and cognition. Self-report approaches capture personality features about which Gerry is more aware, whereas implicit methods such as the Rorschach and TAT can be used to test hypotheses about features that might lie outside of his awareness (Bornstein, 2002; Stein et al., 2014). The approach also accounts for each aspect of Figure 2, as various scales in this battery connect to the broad phenotypes that structure that hierarchy. Finally, the assessments also cover each of the aspects of Figure 3, also accounting for some of the more dynamic aspects of interpersonal situations that might occur across different levels of personality or across time (Hopwood et al., 2015).

Gerry's IQ was estimated at 135, and there was no evidence of impairments in attention or memory. The PAI was relatively healthy, with validity scales within normal limits but no clinical scales above 70T. The highest elevations were on social detachment (64T), dominance (61T), alcohol problems (63T), and obsessive–compulsive (61T). The Rorschach, however, had a high number of texture and morbid responses, suggesting unpleasant affects that might exist somewhat "below the surface" and a perhaps unacknowledged desire to be cared for by others.

The TAT stories were linear and all had a similar theme in which a powerful self overcomes some kind of significant obstacle, but the ending is ambiguous. Christina commented during supervision about how, despite Gerry's impressive cognitive abilities, the TAT stories tended to be unrealistic. For instance, on Card 1, the boy learns to be the best violin player in his school despite being blind and unable to read sheet music, but

having done so, ultimately decides that the violin is not for him so he would play piano instead. Given her concerns about his memory, she wondered if this might reflect memory problems that were not detected by other tests. The supervisor suggested that memory problems were possible, but also used the TTPM to point out the more likely possibility that the stories activated some difficult emotions that affected cognition.

Gerry reported relatively few interpersonal problems, with those that did occur involving him being too dominant. In contrast, his girlfriend described him as too cold, although she also agreed that his functioning was not impaired, in general. Gerry described on other interpersonal circumplex measures valuing being close and connected to others, and said that he was most sensitive to others' rejection. From the EMA data, there were strong correlations between negative affect and self-esteem, and both of these variables correlated strongly with his submissive behavior and others' cold behavior.

History and model-based interpretation

A developmental history and aspects of Christina's interactions with Gerry provided some helpful context for these data. Gerry was the only child of parents who endured what appeared to be a relatively distant and unhappy marriage. His father spent 60 hours or more per week working as an administrator at a large steel plant. His mother was emotionally impulsive, and Gerry learned as an adult that she had several romantic affairs while he was a child. Although Gerry grew up being closer to his mother than his father, in retrospect he saw her as selfish and impulsive, and had a difficult time being close to her as an adult. He was also not close to his father, saying, "My father is not the type of person you can really get close to." In this developmental context, Gerry learned that hard work and success was the best way to gain the admiration of both his mother and his father. However, he also learned that his success was not always met with loving concern, and as a young man he began testing misbehavior as an alternative. He would get in trouble at school because of his disrespectful behavior, to which his father would respond with stern punishment, but his mother would respond with indulgences, such as when she kept his absences from school secret from his father.

Using the interpersonal situation model (Figure 3), Christina's supervisor helped her see the dynamic relationship between some of his personality processes as they emerged in the room with her. They noticed how he would handle some difficult memories of his own childhood and his own experience of parenting by becoming somewhat somber and slow, and averting his gaze, but this would typically be followed up with a light-hearted joke and some declaration regarding his resilience and accomplishments. Christina was able to see in these interactions how both the Rorschach and PAI results communicated important information about his distress, and to experience how Gerry used his interactions with her to regulate himself. Christina initially found herself slightly uncomfortable when Gerry became more morose, and would readily join with him by laughing at his jokes and commending his resilience. The supervisor used the interpersonal situation model to help her identify these moments. Christina encouraged Gerry to stay with negative affects rather than deflecting

with humor or self-congratulation, so they could help him develop more realistic answers to his questions.

Gerry's problems can be located in the TTPM model (Figure 1) as involving self/other and affect, and difficulties with awareness of certain aspects of these components in his life. This scheme proves especially helpful with integrating apparently disparate sources of information, and specifically for dealing with the fact that self-report and performance-based instruments provided rather different pictures of his depression. With respect to Figure 2, prominent characteristics involve negative affects that are largely suppressed, as well as highly conscientious and achievement-oriented behaviors that serve to help him cope with painful feelings. Many of Gerry's difficulties lied at the interface of these two surfaces—there seemed to be a connection between his occupational and interpersonal successes and his negative affects, such that his experience of success might have mollified acute experiences of negative emotions but in the long run did not lead to a satisfying life.

Figure 2 is helpful in understanding Gerry's diagnosis. Although he did not meet full criteria for major depressive disorder, it was clear that negative affect was a major aspect of his presentation and difficulties. He did meet diagnostic criteria for obsessive–compulsive personality disorder, but only on the basis of four criteria. Thus, he was essentially comorbid for these two conditions, and prototypic for neither. A more accurate and empirically based way of saying this is that his problems tended to manifest at the intersection of the negative affect, disinhibition and compulsivity, and antagonism domains, in that his problems occurred as a function of his efforts to cope with mostly suppressed negative emotions via achievement and interpersonal grandiosity. In more colloquial language, Gerry experiences a lot of negative emotions that he deals with by focusing on his successes, and when that does not work, can be prone to impulsive behavior that includes lashing out at others.

The interpersonal situation (Figure 3) can be used to understand the patterning of these problems in here-and-now interactions. Christina and her supervisor developed the hypothesis that Gerry had a relatively unstable self system with roots in his highly dichotomous experience of his parents. Both of his parents sought out personal achievements to deal with chronic unhappiness—his father became an important business leader and his mother had secret affairs. Gerry had learned and applied both of these strategies in his life, but, like his parents, was not happy and did not experience deep meaning in any of his behavior. His life was like the boy with the violin, who became a master at everything he tried and then wondered about what to do next. In Figure 3, this would be understood as a fragile self system that is closely connected to his affective experiences. When negative affects emerged, Gerry quickly utilized his significant cognitive and interpersonal strengths to shore up the self system and quell the affective disturbance. With all the acting, however, came very little time for reflection about the deeply painful affect that initiated the process and how it had to do with his sense of self. When asked, in fact, Gerry reported a very solid self-concept.

Assessment intervention

Christina used an assessment intervention (Finn, 2007) to bring this dynamic to light for Gerry. She asked him to do a digit span backwards, and Gerry received an average score of 10 across three trials. She then reviewed Gerry's TAT stories, and used this as a launching point for discussing his experience of childhood. This helped Gerry see his affairs and business achievements as a way to get the love and attention he desires. Gerry said that he felt as if he had been acting like a child, and teared up a bit. The digit span was readministered, and Gerry was only able to reliably remember six digits. This helped Gerry see that his memory problems were related to his mood dysregulation, which was mostly under the surface, which explains why he had a vague sense that he needed to make some adjustments to manage the next phase of his life but did not have a clear idea of what kind of adjustments might be in order. Christina then helped him see how this kind of process had emerged in their interactions, which he experienced as empathic and accurate.

Conclusion

Psychological assessment is a complex professional activity that requires a broad foundation of skills, including a basic understanding of psychometrics and test interpretation, a working knowledge of psychological functioning and psychopathology, a balance between flexibility and skepticism, and the use of one's own feelings to make inferences about clients. Students and teachers often struggle with various components of an assessment, and might cope by simplifying the process to reduce the complexity of assessment data but also miss important aspects of the person they are assessing.

The three conceptual models presented in this article have rich theoretical and empirical foundations, different but overlapping functions in applied assessment, and significant potential for training students to deal with the complexity of psychological assessment. The TTPM (Figure 1) has particular value in integrating multimethod cognitive, personality, and psychopathology test data to develop and test hypotheses about how different aspects of the mind interact to give rise to behavior. The hierarchical trait model (Figure 2) has particular value in simplifying diagnostic data by connecting them to basic units of individual differences in personality and psychopathology, thereby reducing the number of diagnostic labels necessary to summarize a case and ameliorating diagnostic issues related to comorbidity and heterogeneity. The interpersonal situation model (Figure 3) has particular value for connecting abstract test data to here-and-now interactions that occur between patient and clinician, thereby providing the clinician with a systematic heuristic framework for thinking about how to interact with the patient in real time. We emphasize that complementary potential of these three models in clinical and training contexts. All models presented have potential benefits for teaching and learning psychological assessment and perhaps enhancing the perceived value of assessment training to psychologists working outside of personality assessment. It is also possible that some models might be more useful for some cases than others. For example, the TTPM might have relatively more

value for neuropsychological assessment, the hierarchical model for differential diagnosis, and the interpersonal situation model for treatment planning.

This article described these models to provide instructors, supervisors, and trainees with tools that they can use to economically account for the richness of their clients in their assessment practice. In line with the American Psychological Association's recommendations for training clinical competencies, we believe that conceptual models will be most effectively learned if they are taught in a manner that is scaffolded and thoughtful. For instance, it might make sense for first-year graduate students to consider how different tests might connect to different aspects of each model. Then, students could consider how these are useful frameworks with which to integrate multimethod assessment data and make clinical predictions, in collaboration with supervisors. For interns, these models can be used to think more deeply about the nature of the mind and how that nature gives rise to behavior, including test responses.

We recognize that the models presented here do not exhaust all of the schemes that might be suitable for teaching assessment and encourage assessment instructors to identify or develop models specific to their teaching needs. The general point that we would like to emphasize involves the importance of using conceptual models that connect client behavior, empirical evidence, and test data in clinical practice, and the value of such models for helping trainees learn applied assessment. The use of evidence-based and clinically useful assessment models such as those described in this article can significantly facilitate assessment training, competency evaluation, and practice.

References

Ackerman, S. J., Fowler, J. C., & Clemence, A. J. (2008). TAT and other performance-based assessment techniques. In R. Archer & S. Smith (Eds.), *Personality assessment* (pp. 337–378). New York, NY: Routledge.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Barrett, L. F., Mesquita, B., Ochsner, K. N., & Gross, J. J. (2007). The experience of emotion. *Annual Review of Psychology, 58*, 373–403.

Beck, A. T. (1983). Cognitive therapy of depression: New perspectives. In P. J. Clayton & E. J. Barrett (Eds.), *Treatment of depression: Old approaches and new controversies* (pp. 265–290). New York, NY: Raven Press.

Beck, A. T. (1991). Cognitive therapy: A 30-year retrospective. *American Psychologist, 46*, 368–375.

Blais, M. A. (2010). The common structure of normal personality and psychopathology: Preliminary exploration in a non-patient sample. *Personality and Individual Differences, 48*, 322–326.

Blais, M. A., & Hopwood, C. J. (2010). Personality focused assessment with the PAI. In M. Blais, M. Baity, & C. Hopwood (Eds.), *Clinical applications of the Personality Assessment Inventory* (pp. 195–210). New York, NY: Routledge.

Blais, M., & Smith, S. (2014). Improving the integration process in psychological assessment: Data organization and report writing. In R. Archer & S. Smith (Eds.), *Personality assessment* (pp. 405–439). New York, NY: Routledge.

Blatt, S. J., Besser, A., & Ford, R. Q. (2007). Two primary configurations of psychopathology and change in thought disorder in long-term intensive inpatient treatment of seriously disturbed young adults. *American Journal of Psychiatry, 164*, 1561–1567.

Blatt, S. J., & Luyten, P. (2009). A structural-developmental psychodynamic approach to psychopathology: Two polarities of experience across the life span. *Development and Psychopathology, 21*, 793–814.

Bornstein, R. F. (2002). A process dissociation approach to objective-projective test score relationships. *Journal of Personality Assessment, 78*, 47–68.

Buss, D. M. (2001). Human nature and culture: An evolutionary psychological perspective. *Journal of Personality, 69*, 955–978.

Campbell, J. D., Assanand, S., & Paula, A. D. (2003). The structure of the self-concept and its relationship to psychological adjustment. *Journal of Personality, 71*, 115–141.

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavalle, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates and cultural boundaries. *Journal of Personality and Social Psychology, 70*, 141–156.

Cattell, R. B. (1943). The description of personality: Basic traits resolved into clusters. *The Journal of Abnormal and Social Psychology, 38*, 476–506.

Cook, M. B., & Smallman, H. S. (2008). Human factors of the confirmation bias in intelligence analysis: Decision support from graphical evidence landscapes. *Human Factors, 50*, 745–754.

Cronbach, L. J. (1957). The two disciplines of scientific psychology. *American Psychologist, 12*, 671–684.

Davidson, R. J., Pizzagalli, D., Nitschke, J. B., & Putnam, K. (2002). Depression: Perspectives from affective neuroscience. *Annual Review of Psychology, 53*, 545–574.

Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology, 73*, 1246–1256.

Exner, J. E., Jr. (2003). *The Rorschach: A Comprehensive System: Vol. 1. Basic foundations and principles of interpretation* (4th ed.). New York, NY: Wiley.

Eysenck, H. J. (1950). *Dimensions of personality*. London: Kegan Paul, Trench, Trubner.

Finn, S. E. (2007). *In your client's shoes: Theory and techniques of therapeutic assessment*. Mahwah, NJ: Erlbaum.

Fonagy, P., & Bateman, A. W. (2006). Mechanisms of change in mentalization-based treatment of BPD. *Journal of Clinical Psychology, 62*, 411–430.

Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist, 48*, 26–34.

Handler, L., & Meyer, G. J. (1998). The importance of teaching and learning personality assessment. In L. Handler & M. J. Hilsenroth (Eds.), *Teaching and learning personality assessment* (pp. 3–30). Mahwah, NJ: Erlbaum.

Harkness, A. R., Reynolds, S. M., & Lilienfeld, S. O. (2014). A review of systems for psychology and psychiatry: Adaptive systems, personality psychopathology five (PSY–5), and the *DSM–5. Journal of Personality Assessment, 96*, 121–139.

Hopwood, C. J., Pincus, A. L., & Wright, A. G. C. (in press). The interpersonal situation: Integrating clinical assessment, formulation, and intervention. In D. B. Samuel & D. Lynam (Eds.), *Using basic personality research to inform the personality disorders*. Oxford, UK: Oxford University Press.

Hopwood, C. J., Wright, A. G. C., Ansell, E. B., & Pincus, A. L. (2013). The interpersonal core of personality pathology. *Journal of Personality Disorders, 27*, 270–295.

Hopwood, C. J., Zimmermann, J., Pincus, A. L., & Krueger, R. F. (2015). Connecting personality structure and dynamics: Towards a more evidence based and clinically useful diagnostic scheme. *Journal of Personality Disorders, 29*, 431–448.

Insel, T., Cuthbert, B., Garvey, M., Heinssen, R., Pine, D. S., Quinn, K., … Wang, P. (2010). Research domain criteria (RDoC): Toward a new classification framework for research on mental disorders. *American Journal of Psychiatry, 167*, 748–751.

Johnstone, T., Reekum, C. M., Urry, H. L., Kalin, N. H., & Davidson, R. (2007). Failure to regulate: Counterproductive recruitment of top-down prefrontal-subcortical circuitry in major depression. *Journal of Neuroscience, 27*, 8877–8884.

Kernberg, O. F. (1996). A psychoanalytic theory of personality disorders. In J. Clarkin & M. Lenzenweger (Eds.), *Major theories of personality disorder* (pp. 106–140). New York, NY: Guilford Press.

Koren, D., Seidman, L. J., Goldsmith, M., & Harvey, P. D. (2006). Real-world cognitive and metacognitive dysfunction in schizophrenia: A

new approach for measuring (and remediating) more "right stuff." *Schizophrenia Bulletin, 32*, 310–326.

Kotov, R., Ruggero, C. J., Krueger, R. F., Watson, D., Yuan, Q., & Zimmerman, M. (2011). New dimensions in the quantitative classification of mental illness. *Archives of General Psychiatry, 68*, 1003–1011.

Krueger, R. F., & Markon, K. E. (2014). The role of the DSM–5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. *Annual Review of Clinical Psychology, 10*, 477–501.

Lerner, P. M. (1998). *Psychoanalytic perspectives on the Rorschach.* Hillsdale, NJ: Analytic Press.

Markon, K. E., Krueger, R. F., & Watson, D. (2005). Delineating the structure of normal and abnormal personality: An integrative hierarchical approach. *Journal of Personality and Social Psychology, 88*, 139–157.

Mayer, J. D. (1998). A systems framework for the field of personality. *Psychological Inquiry, 9*, 118–144.

Mayer, J. D. (2005). A tale of two visions: Can a new view of personality help integrate psychology? *American Psychologist, 60*, 294–307.

McCrae, R. R., & Costa, P. T., Jr. (2003). *Personality in adulthood: A five factor theory perspective* (2nd ed.). New York, NY: Guilford.

Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review, 102*, 246–268.

Morey, L. (1991). *Personality Assessment Inventory professional manual.* Odessa, FL: Psychological Assessment Resources.

Murray, H. A. (1943). *Manual for the Thematic Apperception Test.* Cambridge, MA: Harvard University Press.

Patrick, C. J., & Hajcak, G. (in press). RDoC: Translating promise into progress. *Psychophysiology*.

Pincus, A. L. (2005). A contemporary integrative interpersonal theory of personality disorders. In J. Clarkin & M. Lenzenweger (Eds.), *Major theories of personality disorder* (2nd ed., pp. 282–331). New York, NY: Guilford.

Pincus, A. L., & Hopwood, C. J. (2012). A contemporary interpersonal model of personality pathology and personality disorder. In T. A. Widiger (Ed.), *Oxford handbook of personality disorders* (pp. 372–398). Oxford, UK: Oxford University Press.

Pincus, A. L., Lukowitsky, M. R., & Wright, A. G. C. (2010). The interpersonal nexus of personality and psychopathology. In T. Millon, R. Kreuger, & E. Simonsen (Eds.), *Contemporary directions in psychopathology: Scientific foundations for DSM–V and ICD-11* (pp. 523–552). New York, NY: Guilford.

Posner, J., Russell, J. A., & Peterson, B. S. (2005). The circumplex model of affect: An integrative approach to affective neuroscience, cognitive development, and psychopathology. *Development and Psychopathology, 17*, 715–734.

Ready, R. E., & Veague, H. B. (2014). Training in psychological assessment: Current practices of clinical psychology programs. *Professional Psychology: Research and Practice, 45*, 278–282.

Robins, C. J., & Luten, A. G. (1991). Sociotropy and autonomy: Different patterns of clinical presentation in unipolar depression. *Journal of Abnormal Psychology, 100*, 74–77.

Rorschach, H. (1927). *Rorschach test: Psychodiagnostic plates.* Cambridge, MA: Hogrefe.

Sadler, P., Ethier, N., & Woody, E. (2011). Interpersonal complementarity. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 123–142). New York, NY: Wiley.

Safran, J. D., & Kraus, J. (2014). Alliance ruptures, impasses, and enactments: A relational perspective. *Psychotherapy, 51*, 381–387.

Schafer, R. (1954). *Psychoanalytic interpretation in Rorschach testing.* New York, NY: Grune & Stratton.

Slovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity and repair: Exploring emotional intelligence using the trait meta-mood scale. In J. W. Pennebaker (Ed.), *Emotion, disclosure and health* (pp. 125–154). Washington, DC: American Psychological Association Press.

Stein, M. B., Slavin-Mulford, J., Siefert, C. J., Sinclair, S. J., Malone, J., Bello, I., & Blais, M. A. (2014). SCORS-G stimulus characteristics of select Thematic Apperception Test cards. *Journal of Personality Assessment, 96*, 339–349.

Sugarman, A. (1991). Where's the beef? Putting personality back into personality assessment. *Journal of Personality Assessment, 56*, 130–144.

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry.* New York, NY: Norton.

Surakka, V., Tenhunen-Eskelinen, M., Hietanen, J. K., & Sams, M. (1998). Modulation of human auditory information processing by emotional visual stimuli. *Cognitive Brain Research, 7*, 159–163.

Thomas, K. M., Hopwood, C. J., Donnellan, M. B., Sanislow, C. A., Ansell, E. B., Grilo, C. H., … Morey, L. C. (2014). Personality heterogeneity in PTSD: Distinct temperamental and interpersonal typologies. *Psychological Assessment, 26*, 23–34.

Wechsler, D. (2008). *Wechsler Adult Intelligence Scale* (4th ed.). San Antonio, TX: Pearson.

Wechsler, D. (2009). *Wechsler Memory Scale* (4th ed.). San Antonio, TX: Pearson.

Wiggins, J. S. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In W. Grove & D. Cicchetti (Eds.), *Thinking clearly about psychology: Essays in honor of Paul E. Meehl* (Vol. 2, pp. 89–113). Minneapolis: University of Minnesota Press.

Wiggins, J. S. (1996). *The Five-Factor Model of personality: Theoretical perspectives.* New York, NY: Guilford.

Wiggins, J. S., & Trapnell, P. D. (1996). A dyadic interactional perspective on the five-factor model. In J. S. Wiggins (Ed.), *The Five Factor Model of personality: Theoretical perspectives* (pp. 88–162). New York, NY: Guilford Press.

Winnicott, D. W. (1965). *Maturational processes and the facilitating environment: Studies in the theory of emotional development.* London, UK: Hogarth Press.

Wright, A. G. C. & Hopwood, C. J. (in press). Advancing the assessment of dynamic psychological processes. *Assessment*.

Wright, A. G. C., & Simms, L. J. (2015). A metastructural model of mental disorders and pathological personality traits. *Psychological Medicine, 45*, 2309–2319.

Wright, A. G. C., Thomas, K. M., Hopwood, C. J., Markon, K. E., Pincus, A. L., & Krueger, R. F. (2012). The hierarchical structure of *DSM–5* pathological personality traits. *Journal of Abnormal Psychology, 121*, 951–957.