Projective Personality Assessment of Anxiety: A Critical Appraisal

Caleb W. Lack & Shannon P. Thomason

University of Central Oklahoma

Author Note

Caleb W. Lack, Ph.D., Department of Psychology, University of Central Oklahoma; Shannon P. Thomason, Department of Psychology, University of Central Oklahoma.

Address correspondence to Dr. Caleb Lack, 100 N. University Drive, Box 85, Edmond, OK 73034. Email: clack@uco.edu

In press for D. McKay & E. Storch (Eds.),
Handbook of Assessing Variants and Complications in Anxiety Disorders

Abstract

This chapter reviews the scientific evidence for and against the use of projective measures (e.g., Rorschach Inkblot Method, Thematic Apperception Test, figure drawings, and sentence completion tasks) when assessing children and adults for anxiety disorders. First, a brief history of the theory behind and development of each of the measures is given, followed by an examination of the empirical evidence supporting or invalidating their usage for assessment of personality and psychopathology, particularly the anxiety disorders. Finally, recommendations on the use of the measures are given.

Keywords: projective assessment, anxiety, reliability, validity

Projective Personality Assessment of Anxiety: A Critical Appraisal

The assessment of an individual's psychological state – thoughts, feelings, behaviors – is an enormous part of a psychologist's life. Indeed, the story of clinical psychology prior to World War II is the story of psychological assessment, from Lightner Witmer's first psychological clinic to Army Alpha and Army Beta to the Wechsler-Bellevue intelligence test (Plante, 2011). Unfortunately, as is the case in the development of most scientific fields, not all early development was actually progressive. Many health fields in their infancy embrace non-supported (outside of anecdotal stories or personal experience) theories, treatments, or measures of assessment. In medicine, for example, we have humorism, which led to bleeding and cupping (Hart, 2001), or animal magnetism, which led to mesmerism and channeling the magnetic fluid (Baker, 1990). In clinical psychology, many today view the continued use of projective measures of personality to assess psychopathology as akin to a physician who uses trepanning to treat epilepsy – as a pseudoscientific practice which should have no place in a modern, scientific field. There are, however, numerous supporters of the use of projective techniques and tests to assess for psychopathology in both clinical practice and academia (Hogan, 2005; Hojnoski et al., 2006).

The purpose of this chapter is to examine, using a scientifically skeptical but not cynical mindset, if the evidence supports the continued use of projective measures in the realm of anxiety assessment. To do so, we will first familiarize the reader with the historical and theoretical background behind the development of the most commonly used projective measures. Then, we shall examine the history of the controversy of their use, beginning in the 1950s and continuing to the present day. Next, evidence specifically concerning the use of such

instruments for assessment of anxiety (both in general and for specific problems) will be summarized. Finally, conclusions and recommendations for clinical practice will be offered.

It is important to note at this point is that projective measures are often equated with psychoanalytic and psychodynamic theories of personality and psychopathology, particularly by persons unfamiliar with their history and development. However, not all measures (e.g., the Rorschach) were developed from a psychodynamic or analytic framework, although many were indeed later co-opted by clinicians and researchers from such a theoretical background. Readers should also be aware of the long-standing and ongoing controversies and debates regarding the validity and scientific status of psychodynamic theory, which has come under attacks from both within (e.g., Bornstein, 2001) and without (Fuller Torrey, 1986; Popper, 1963). There remain, however, many ardent supporters and promoters of psychodynamic theory and the usefulness of its treatment methods (e.g., Leichsenring, Rabung, & Leibing, 2004 ; Shedler, 2010).

Before turning to the history of projective measures, though, some terminology issues must be addressed. Types of measures used to assess for personality characteristics and psychopathology are often divided into two categories: objective and projective (Weiner & Greene, 2008). Objective tests make *direct* inferences about a person's psychological state based on his or her self-report (or in some cases, report from significant others such as parents) to very clear questions. Projective tests, in which instructions or stimuli are more ambiguous and less structured, make *indirect* inferences about a person's psychological state. The term "projective" itself comes from Frank (1939), who thought that using ambiguous stimuli would

allow a person to project their "private world" onto such stimuli, and as such "interpret the material and react affectively to it" (p. 403).

This terminology can be seen, however, as heavily value-laden (e.g., "If one is objective, the other must be subjective!") and may not be very useful. One task force of the American Psychological Association, the Psychological Assessment Work Group, even recommended replacing the label "objective" with "self-report instrument" and "projective" with "performance-based measures" (Meyer et al., 2001). Others recommended use of "self-report measures" and "free response measures" (Meyer & Kurtz, 2006). Such recommendations, however, have not been adopted by the majority of practitioners and researchers, and as such this chapter will retain usage of the more familiar term "projective measures."

A Brief History of Projective Measures

Many persons who are only superficially familiar with the development of the various measures to be discussed below (the Rorschach Inkblot Method, the Thematic Apperception Test, figure drawings, and sentence completion) have the idea that the usage and interpretation of these measures are all based on Sigmund Freud's theories of personality and psychoanalysis. This, however, is far from the truth. In fact, each measure described below has its own unique development, sometimes directly related to Freudian theories, sometimes influenced by them, and sometimes largely independent of them. Below, we will discuss the origins of four common projective tests (or classes of tests), focusing on the theoretical underpinnings of them and the scientific evidence for such theories. We will then discuss the basis and support for their use in clinical settings, particularly for assessment of anxiety.

Rorschach Inkblot Method

To gain an understanding of the strength of beliefs for and against the use of our first test, the Rorschach (also called the Rorschach Inkblot Method [RIM] has been described as being "the most cherished and the most reviled of all psychological assessment tools" (Hunsley & Bailey, 1999, p. 267). Frequently listed as one of the most commonly used psychological measures by clinical and school psychologists (Archer & Newsom, 2000; Hojnoski et al., 2006) and frequently taught in the clinical psychology doctoral programs (Belter & Piotrowski, 2001), although anecdotal evidence suggests a decline across the past decade. The Rorschach also holds a grip on the public imagination, as evidenced by the use of similar inkblots in media from comic books ("Watchmen" by Alan Moore and Dave Gibbons) to music videos ("Crazy" by Gnarls Barkley).

Hermann Rorschach's development of the test that would bear his name is an interesting story. He was apparently intrigued as a youth (as was much of Germany) by a popular parlor game called *Klecksographie* (roughly "Blotto" in English), where one would drip ink onto a piece of paper, fold it in half, and then compete to give the most numerous or interesting answers (Exner, 2003). Psychological research using inkblots had been conducted by a number of researchers in the early part of the 20th century, but had primarily confined itself to the areas of visual perception and memory processes, although Alfred Binet researched their use in measuring intelligence (Zubin et al., 1965). Rorschach, however, was either unaware or ignored these lines of research when, in 1918, he created his blots and developed their usage. He did, however, appear to be inspired by work conducted by a medical student in Zurich, who was unable to show success in distinguishing psychotic patients from non-patients using responses to inkblots (Gurvitz, 1951).

Rorschach's inkblots were not what one would have seen in a game of Blotto, however. He appears to have painstakingly constructed them using ink and watercolors, rather than relying purely on chance or random drips and patterns (Exner, 2002; Morganthaler, 1954). Based on his only major work (he died at age 37, only nine months after publication of it), Rorschach was particularly concerned with two factors in a person's response to the blots: movement and color (Rorschach, 1921/1964). He does not appear to have been influenced by Freudian theories in constructing the inkblots or their interpretation, and instead had his own theory that the perception of movement and color would give insight into personality. In particular, he thought movement responses were related to introversion, while color responses were related to extraversion ("extratension" in his terminology).

The idea that perception of movement and introversion were related appears to be based in part on muscle movement and dream research by a philosopher in the 1800s named John Mourly Vold (Ellenberger, 1993). Rorschach took Mourly Vold's idea that inhibition of movement during sleep would cause more dream imagery involving movement and applied it to the responses generated by his inkblots. In other words, his theory was that introverts should see more images that are moving in the blots, due to their being psychologically inhibited. Rorschach also outlined a theory that the perception and use of color in descriptions of the inkblots was related to affect and extraversion. In particular, those who used more color responses were more extraverted and likely to show high levels of emotion. Unlike with his ideas about movement, however, his theory about color seems to have been pulled from common vernacular ("black moods" for example) and personal opinion rather than any research or previous theories (Rapaport, Gill & Shafer, 1946). Rorschach also seemed

particularly interested in the balance of introversion and extraversion, called "Experience Balance" in English (abbreviated *EB*). The ratio of movement (*M*) to color responses, he believed, would reveal a person's "basic experience and orientation toward reality" (Wood, Nezworski, Lilienfeld, & Garb, 2003).

Rorschach's reasons for focusing on color and movement, therefore, need to be examined to see if they are actually supported by a preponderance of scientific evidence. A review of the literature shows that the answer is, for the most part, "no." *EB*, for example, has not consistently been demonstrated to be related to introversion or extraversion (see Holtzman, 1950 or Wysocki, 1956 for disconfirming evidence; Allen, Richer, & Plotnick, 1964 for confirming), and Color responses have not been consistently related to any particular diagnosis such as depression (for a review see Stevens, Edwards, Hunter & Bridgman, 1993). It should be noted, however, that some of Rorschach's hypotheses do have some consistent support. For example, that a more intelligent person would provide higher numbers of *M* responses has been supported to a moderate degree (see Frank, 1979 for a review), as have some indicators of psychotic disorders (see Dawes, 1994; Lilienfeld, Wood, & Garb, 2001).

So, was Rorschach right? The answer is "mostly not" with the occasional "yes." While his major hypotheses have not been shown to be correct, some minor ones have support. What does this mean for the test as a whole, then? Should it all be thrown out? These inconsistencies and concerns led to numerous within-group conflicts during the 1930s and beyond, as different groups of researchers and clinicians developed further types of scores, or refined the meaning of certain scores (see Exner, 1969 for a review of major systems of interpretation). It was during these conflicts that some began to use the Rorschach as a more psychoanalytically-oriented

test, interpreting responses to blots as if they were dreams (content approach) rather than relying on a more formal structural approach (e.g., following Rorschach's methods). Furthermore, well-conducted research in the 1950s showed that the Rorschach was not more useful (and was in fact slightly less useful) than a more objective measure of personality, the MMPI, and appeared to highly overpathologize normal individuals (e.g., Little & Schneidman, 1959). Further research showed that it added little to nothing in the way of incremental validity if one already had access to biographical information and a person's history (see Garb, 1998 for a review). By the beginning of the 1960s, most research-oriented and scientifically-based psychologists thought the Rorschach was not a useful instrument (see critiques by Chronbach, 1949; Jensen, 1958).

Such criticism and lack of scientific support led directly to a number of reform attempts for the Rorschach. The most complete one, and the one that likely saved the Rorschach from being consigned to the graveyard of psychological tests, was John Exner's Comprehensive System (CS; 1974, 1993). The CS included reviews of the literature, norms, and administration guidelines – all things that were lacking at the time. Exner also led extensive research into reliability and validity of the traditional scores, while at the same time developing new ones. Exner has been described as having "almost single-handedly rescued the Rorschach and brought it back to life" (American Psychological Association Board of Professional Affairs, 1998, p. 392). All the while, though, findings by researchers other than Exner or his associates began to appear, with results often in sharp contrast to those reported in the CS's manual. In fact, the vast majority of the supportive studies cited in the latest CS manual (Exner, 1993) are

unpublished studies conducted by Exner and his research team at Rorschach Workshops (Wood et al., 2003).

As research on the CS conducted by those *without* ties to Exner and the Rorschach Workshop began to accumulate in the 1980s and 1990s, numerous concerns that were identical to those raised by research in the 1950s and 1960s were raised: overpathologizing, low diagnostic accuracy outside of psychotic disorders, lack of relationship to objective measures of psychopathology and personality (for a review see Hunsley & Bailey, 2001; Lilienfeld, Wood, & Garb, 2000). Even the norms of the CS were found to be seriously different from the results of other studies (e.g., Shaffer, Erdberg, & Haroian, 1999; Wood et al., 2001). Flaws within Exner's own norms were even found, as over a third of his normative sample was found to not exist; from his own report, 221 of the 700 normative subjects were actually duplicate records (Exner, 2001). Of special note, the majority of supportive studies for the Rorschach have recently been published in the *Journal of Personality Assessment*, a well-respected journal that publishes large amounts of high quality research. It also happens to be the official journal of the Society for Personality Assessment, which originated as the Rorschach Institute, and is almost exclusively staffed by editors who are very strong proponents of the Rorschach's use.

What, then, can be said about the usage of the Rorschach in clinical settings? Interestingly, both opponents (Wood, Lilienfeld, Garb, & Nezworski, 2000) and proponents (Weiner, 1999) conclude that it should *not* be used diagnostically. To wit, "Rorschach data are of little use in determining the particular symptoms a person is manifesting….Accordingly, the nature of these symptoms is better determined from observing or asking directly about them than by speculating about their presence " (Weiner & Greene, 2008, p. 396). Clinically, there

are *some* CS scores that are related to intelligence and psychotic disorders, just as Rorschach's original system found almost 90 years ago (Wood, Nezworski, & Garb, 2003). But in terms of relationship to currently used diagnostic categories, there is currently no solid scientific evidence that using the Rorschach under the CS can accurately and consistently assist with the diagnosis of anxiety disorders in general, or any specific category of anxiety, such as GAD, PTSD, OCD, or phobias (Wood et al., 2000). It should be noted that one study found specific Rorschach indicators present in children with PTSD (Holady, 2000), although the same indicators were found in children with oppositional defiant disorders, although to a lesser degree, it was a small sample, and the raters were not blind to the children's diagnoses (as confirmed by objective measures). There is, however, a non-CS scale – the Elizur Anxiety scale – that relates to real-world anxious behaviors (Aronow & Reznikoff, 1976; Goldfried, Stricker, & Weiner, 1971), although not to specific disorders. Unfortunately, it is best regarded as a research instrument, given the lack of standardized norms or methods of administration (Wood, Nezworksi, & Garb, 2003).

In summary, then, the Rorschach began life in 1922 as a theoretically shaky, non-empirically supported test for the majority of psychopathology (psychotic disorders being the exception). Despite almost 90 years of research and usage on it, and various iterations of scoring and administration criteria, the preponderance of evidence today indicates that it has changed little over years. There is not any reasonable, empirically-supported reason to use the Rorschach as a tool to assist in the diagnosis of any anxiety disorder.

Thematic Apperception Test

The Thematic Apperception Test (TAT; Murray, 1943) has a history almost as long as the Rorschach, and, also like the Rorschach, it has a highly interesting development and history (see Cramer, 2004 for full details). The two major figures in the development of the TAT were Henry Murray and Christina Morgan. Murray was a surgically trained physician with a PhD in biochemistry before being hired on faculty of the Harvard Psychological Clinic in 1926. Although initially largely unqualified for such a position, Murray underwent extensive training in psychoanalysis, including meeting with Carl Jung, and intensive reading in psychiatric and psychological literature (Robinson, 1992). Morgan was an artist and certified nurse's aide who was highly influenced by Jung's theories on personality and psychopathology, having been analyzed by him personally (Douglas, 1993). Although unremarked on in many writings on the TAT (e.g., Groth-Marnat, 2003; Weiner & Greene, 2008), Murray and Morgan also engaged in a long-lasting extramarital affair that ended only with her suicide in 1967 (Douglas, 1993). Murray and Morgan may appear odd choices to develop a major psychological test, but the TAT ranks second only to the Rorschach as the most often used type of projective test by clinical psychologists (Camara et al., 2000). It is less popular, but still quite frequently used by school psychologists (Hojnoski et al., 2006).

Murray appears to have been the theoretical driving force behind the TAT, as it is based on his *needs-press* concepts of personality. For Murray, an individual's personality is the result of an interaction between one's needs (internal motivations) and presses (environmental or situational pressures that impact how one expresses those needs). Morgan, who is absent as an author from the officially published version of the test[1] (Murray, 1943), assisted more in the preparation of the actual testing materials (the pictures on the test cards), some early

administration of the measure, and writing the results for publication (Holt, 1949). The instrument itself (in the final version) consists of 31 black and white cards that have pictures of various kinds (14 show a single person, 11 show two people, three have a group of people, two have scenes of nature, and one is blank), although only 20 are used with each individual, since some cards are specific to age or gender. Examiners show the cards to the examinee and ask him or her to tell a story based on the picture. The stories that are told, according to Murray, reveal numerous aspects of personality and can be used to understand how someone thinks and feels in real-world influenced by Jung's theories, Murray believed that these stimuli would also "expose the underlying tendencies which the subject…is not willing to admit, or cannot admit because he is unconscious of them" (p. 1, 1943).

The TAT manuals (Murray, 1943; 1971) provide very clear and detailed procedures for assessing 28 "needs" and 24 "presses" along a 5-point scale based on the stories told. However, similar to what happened with the Rorschach, numerous other systems and methods of using the TAT soon developed. Methods using a smaller number of cards than the standard 20 (often 8-12) became common (Karon, 2000), and a majority of practitioners do not appear to use any of the available scoring systems, instead relying on "intuitive" interpretations of the stories (Gieser & Stein, 1999; Groth-Marnat, 2003; Rossini & Moretti, 1997). In fact, surveys show that few users even follow Murray's guidelines to present the cards across two different sessions (Vane, 1981) or even present the same cards in published research (Keiser & Prather, 1990). So, just as with the Rorschach, many users of the TAT, both historically and currently, are not using it as originally intended by the developers or even from the same theoretical viewpoint as them (e.g., Westen et al.'s [1989] psychodynamic, object-relations focused scoring system).

There have been several positive findings regarding scoring on the TAT and relationship to specific areas of psychological functioning, but they have all been found when using a particular scoring system. For example, one meta-analysis found TAT scores under McClelland's system were superior to self-report scores in predicting long-term career outcomes, such as success in a one's career and level of income (Spangler, 1992). Westen's scoring system has been found to differentiate between those with and without personality disorders (Ackerman et al., 1999). Other scoring systems have shown TAT scores to be related to therapy attendance in persons with personality disorders (Ackerman et al., 2000) and general symptom improvement in persons treated in an in-patient unit (Fowler et al., 2004). There have not, however, been any studies that have successfully used the TAT (in any of its scoring variations) to accurately assess anxiety, either in general or for specific diagnostic categories.

Unfortunately, as shown above and noted by many (e.g., Groth-Marnat, 2003; Hunsley, Lee, & Wood, 2003), the majority of those using the TAT clinically would not benefit from this information, since most practitioners are not using either standardized administration or scoring procedures. Add in the TAT's lack of incremental validity (Garb, 1998), the high potential for overpathologizing normal populations based on TAT responses (Lilienfeld et al., 2000), and it can be seen why the TAT "rarely plays a prominent role in clinical diagnostic evaluations" (Weiner & Greene, 2008, p. 469). Indeed, the purpose of the TAT, as originally conceived, was not for it to be used as a diagnostic instrument, but instead as a method of exploring a person's experience of the world around them and the underlying motives they attributed to others. It was not intended to assess for manifested symptoms seen in a psychological disorder.

So, in summary, we see that the TAT has some limited empirical support in assessing for personality disorders and achievement motives when using particular scoring systems. In none of these systems, however, has evidence shown it to be a useful tool to measure cognitive, emotional, or behavioral symptoms of any anxiety disorder. Further, given that few practitioners use the TAT in the standardized manner that it was intended to be used, those that do use it in a diagnostic fashion are undoubtedly relying on personal experience and judgment, rather than empiricism and sound research, with all the attendant biases and problems relying purely on personal experience entails (Dawes, Faust, & Meehl, 1989). In short, the TAT should not be used for the purposes of diagnosing any anxiety disorder.

Figure Drawings

The third type of projective test to be discussed is not a specific measure, like the Rorschach or the Thematic Apperception Test, but instead a collection of measures. A number of methods to reportedly assess personality and psychopathology require that an individual to draw pictures of a person, people, or objects. The three most widely used are the Draw-A-Person test (DAP; Harris, 1963), the House-Tree-Person test (HTP; Buck, 1948), and the Kinetic Family Drawing test (KFD; Burns & Kaufman, 1970). In surveys of clinical psychologists, all rank in the top 15 most commonly used instruments (Hogan, 2005), while school psychologists use them in 26-43% of assessments (depending on the instrument; Hojnoski et al., 2006). Given the speed and ease of their administration (many take fewer than 10 minutes), it is perhaps unsurprising that they are used so frequently.

Although each test has its own set of interpretation(s), there are two broad approaches to scoring figure drawings: the global approach and the sign approach (Lilienfeld, Wood, &

Garb, 2000; Weiner & Greene, 2008). In the global approach (Koppitz, 1968), interpretation is based on sets of indicators that are summed to yield a total score of adjustment (or lack thereof). One scoring system (Tharinger & Stark, 1990) calls for a global score based not sets of indicators, but instead the general impression of the psychologist. The sign approach, in contrast, relies on identification of isolated features of the drawing (e.g., eye size, size of figure, placement of figure) that are supposedly related to specific pathology or personality problems. For example, Machover (1949, 1951) identified large eyes as being linked to paranoid ideation, small figures to low self-esteem, and placing figures high on a page to high achievement striving. Purportedly, constructing these drawings could bypass conscious efforts to hide or exaggerate symptoms and provide a more complete understanding of a person.

Large amounts of research over the last 60 years have been conducted to examine the reliability and validity of figure drawings, with highly varied results. Interrater reliability (IRR) for the individual pieces used in the signs approach, for example, has been shown to be widely variable across different studies (for major reviews see Kahill, 1984; Palmer et al., 2000; Vass, 1998). Though certain signs have been shown as reliable from rater to rater (for example, size, detail, and line heaviness in Joiner et al., 1996), others were horribly unreliable (for example, , throwing the overall IRR into question. The same type of studies examining global scoring in the global approach, have yielded consistently higher rates of IRR, although still quite variable (for reviews see Kahil, 1984; Thomas & Jolley, 1998). Internal consistencies for quantitative approaches have been moderate to high, with many showing high levels (Groth-Marnat & Roberts, 1998; Naglieri, McNeish, & Bardos, 1992).

Validity studies across different projective drawings have met with a number of difficulties, particularly in the sign approach. A primary one is lack of consistency in operational definitions. For instance, different studies or scoring systems often have the same feature interpreted in a different way. To illustrate, West's (1998) meta-analysis found that head sizes were interpreted to indicate sexual abuse in some studies but physical abuse in others. Some guidelines for interpreting drawings seem to almost specialize in making non-falsifiable predictions. Hammer (1959) said that pathology could be seen in drawings that were too large or too small, lines that were too heavy or too light, and ones that had either too few or too many corrections (erasures). Others stated that those same signs could either indicate high levels of anxiety or successful coping efforts against high anxiety (Handler & Reyher, 1965). Or, it might be that, as Waehler (1997) contends, lack of validity in a drawing may be simply because that individual does not show their distress in a drawing. Making such non-falsifiable predictions and explaining away negative findings are both hallmarks of pseudoscientific thinking (Shermer, 2002).

Specific research examining the validity of the sign approach for different psychological characteristics shows the problems one would expect based on the above information. For example, only 7% (2 of 30) of Machover's (1949, 1951) signs have been found to have support – round torsos being indicative of more stereotypically feminine personality traits and drawings that were colored in being related to anxiety level (Kahill, 1984). Similar reviews of the KFD concluded that individual signs showed little to no relation to actual psychopathology (Handler & Habenicht, 1994). A study examining depressive and anxious symptoms in children on an inpatient psychiatric ward used both projective measures and objective measures (Joiner,

Schmidt, & Barnett, 1996). Interestingly, this study found that the differing projective measures not only did not relate to scores on the objective measures, but also did not have a relationship to scores from the different projective measures (even another drawing measure). Other well-controlled studies have similar lack of validity in the sign approach in assessing for depressive and anxious symptoms in children (Tharinger & Stark, 1990). It should be mentioned, however, that one study of school children found that those with high scores on an objective anxiety measure showed used significantly lower amounts of pencil pressure on the DAP, resulting in light lines (LaRoque & Orbzut, 2006).

Despite the lack of validity demonstrated by the sign approaches, however, there is a silver lining for projective drawings. In a study examining the KFD and DAP, Tharinger and Stark (1990) were able to accurately distinguish groups of children. The KFD was able to differentiate between children with and without mood disorders, while the DAP distinguished among children who had mood disorders and mixed mood/anxiety problems (Tharinger & Stark, 1990). Crucial to the point of this chapter, however, neither one, was able to discriminate those with from those without anxiety disorders. There was also not a direct comparison to objective measures and their ability to distinguish between groups, even though there are mountains of evidence to support their use with children (Sattler, 2008). Further, there has been some support for the use of another global scoring procedure for the DAP, the Screening Procedure for Emotional Disturbance, to differentiate between groups of children with and without disruptive behavior problems (Naglieri & Pfeffier, 1992). Several other studies found similar results (e.g., Matto, 2002; Matto, Naglieri, & Clausen, 2005), although one study found much

lower effect size differences and concluded that it was of limited utility in the schools (Wrightson & Saklofske, 2000).

Even these positive findings, though, must be interpreted cautiously at this point. One reason is that it is not known if controlling for intelligence, which has been shown to be lower across many types of psychopathology, would reduce or eliminate the positive findings reviewed above. The lone study the current authors found that addressed that issue (Schneider, 1978) found that controlling for intelligence eliminated the possible incremental validity of drawings given to school-age children when assessing for behavior problems. The complex role of artistic ability in impacting scores and interpretations is also not well-understood, with some suggesting it may play the role of a suppressor variable (Lilienfeld et al., 2000). Also problematic is the fact that it is unknown how many practicing clinicians use a sign versus a global approach, although a small study of active practitioners (Smith & Dumont, 1995) suggests that the vast majority of those that rely on drawings for clinical hypotheses use some combination of the approaches[2].

In summary, it does appear that there may be limited uses for global scoring systems for projective drawings, in particular using the DAP and KFD for assessment of general behavioral and mood problems. There are not, however, any replicated lines of research that support the use of projective drawings and interpretation to differentiate children or adults with anxiety from a normal population, either in general or for specific disorders. The use of projective drawings in persons with anxiety, then, is unlikely to be diagnostically useful or add any incremental validity to more objective measures. Further research on this issue, particularly as regards global scoring systems, should be conducted.

Sentence Completion

The single most frequently used projective method by school psychologists, employed by approximately 60% in the most recent survey (Hojnoski et al., 2006), sentence completion tests (SCTs) are also commonly used by clinical psychologists for both adult and child evaluations (Archer & Newsom, 2000; Camara, Nathan, & Puente, 2000; Hogan, 2005). Compared to the other methods reviewed above, SCTs actually have the longest history of usage and, much like the Rorschach, began life in the realm of experimental psychology. The earliest SCT appears to have been constructed by Herman Ebbinghaus (1897), who used them to examine reasoning and intelligence in adolescents. Their first usage to examine personality and psychopathology began with Carl Jung's theories concerning free word association, which developed into formalized procedures involving only a one word stimulus and response (for examples see Kent & Rosanoff, 1910; Rapaport, Gill, & Schafer, 1946). This evolved into short phrases, and finally sentences and measures quite similar to those used today by the 1930s (Weiner & Greene, 2008). A common thread among the early clinical users of SCTs was that the responses they generated were not simply self-report, but were instead providing a view into inner, conflicts, desires, and wishes (Holsopple & Miale, 1954; Rohde, 1946).

Given that there are well over 40 published SC measures (Sherry, Dahlen, & Holaday, 2004), the current review will focus on only two: the most widely used measure, the Rotter Incomplete Sentences Blank (RISB), and the most heavily researched measure, the Washington University Sentence Completion Test (WUSCT). It should be cautioned, however, that it is unlikely that the below information can generalize to other SCTs.

The RISB (Rotter & Rafferty, 1950; Rotter, Lah, & Rafferty, 1992) is the most used SCT according to surveys of clinical psychologists (Holaday et al., 2000). Originally developed for assessing combat veterans returned from World War II, it was later adapted to be used with high school students, college students, and adults. The manual for the RISB described it as a screening measure for overall adjustment, not intended for comprehensive personality assessment or diagnostic usage. In sharp contrast the RISB, the WUSCT (Hy & Loevinger, 1996) was developed as a research, not clinical, measure. Constructed to measure Loevinger's (1976) theory of ego formation, it has been found to be only rarely used clinically (Holaday et al., 2000), but does have a larger body of research on it than any other SCT (Westenberg, Hauser, et al., 2004). Both measures have objective scoring procedures for each sentence stem, as well as a total score. The WUSCT has shown very strong reliability of numerous types and has been quite well-validated as measure of ego development (Garb, Lilienfeld, Wood, & Nezworski, 2002). The RISB is less well researched, but reviews have shown adequate interrater, split-half, and test-retest reliability (Sherry et al., 2004).

Using the objective scoring method on the RISB, one study was able to reliably detect poor psychosocial adjustment in college students, differentiating those receiving mental health services 80% of the time (Lah, 1989). Similar results were found in detecting delinquent adolescent high school males compared to peers (Fuller, Parmelee, & Carroll, 1982). One study even found a moderate relationship between response types on the RISB and psychopathy as measures by an objective measure (Endres, 2004). No studies the authors are aware of, however, examined using the RISB to separate persons with anxiety disorders from those without. The WUSCT, not being designed to measure psychopathology, has been rarely

employed for such purposes in the reported literature. One study that did compared ego development (as measured by the WUSCT) in adults with and without a history of psychiatric disorders, finding that the WUSCT scores in higher functioning persons with a history of psychiatric disorders were more like the normal controls (Riberio & Hauser, 2009). One exception relevant to this chapter is a study by Westenberg and colleagues (1999), which found WUSCT scores were able to accurately distinguish children with separation anxiety from children with more generalized anxiety problems.

Unfortunately, as was the case with the other measures summarized previously, it appears that few clinicians use objective scoring methods when utilizing SCTs, instead relying on subjective interpretations (Weiner & Greene, 2008). There certainly is the potential to assess certain clinically relevant symptoms from a person's answer to a sentence stem, particularly stems designed to elicit typical cognitions or behaviors seen in various anxiety disorders. For instance, stems to potentially assess social anxiety might include "WHEN I ENTER A ROOM _____" or "PEOPLE THINK I _____" while generalized anxiety symptoms might be examined using stems such as "I OFTEN THINK _____." It is not known, however, if many or any clinicians construct and use such stems, and there are not any published SCTs that do so. Sentence completion tests, although some are useful in assessing general distress (RISB) or ego development (WUSCT), do not therefore appear to be a diagnostically useful tool in the assessment of anxiety as commonly employed. Development of new, specific stems may prove useful, however, and research into the issue should be encouraged.

Conclusions

Hopefully, at this point in the chapter several things have become apparent. First, not all projective tests or techniques were created, or have been researched, equally. In their theoretical constructs, intended uses, and research-supported uses, they differ greatly. Second, the use of projective methods is not an either-or proposition. In opposition to the beliefs of their staunchest supporters, they are not empirically supported to be equally adept at assessing all aspects of personality and psychopathology. And in opposition to the beliefs of their staunchest critics, the research evidence does support the use of projective measures for assessing specific psychological constructs.

Finally, a thorough review of the evidence does not support the routine usage of *any* projective measure in the assessment of anxiety symptoms or diagnostic constructs. While certain measures have been useful in measuring overall adjustment (RISB), psychotic disorders (Rorschach), ego development (WUSCT), personality disorders (TAT), disruptive behavior and mood problems (global figure drawing scores), none have consistently been demonstrated to be diagnostically useful for the assessment of anxiety, either alone or in addition to other measures. Although there is one study showing responses on the WUSCT can differentiate between two types of anxiety in children, it has not been replicated or expanded to either other disorders or other populations.

Based on all of the above information, the current authors cannot support the routine use of any of the projective measures reviewed herein when assessing for anxiety in child or adult populations. It is, however, encouraged and recommended that further research, particularly on the use of sentence completion tasks such as the WUSCT, be conducted to explore and determine their possible utility in eliciting examples of cognitive, behavioral, or

emotional components of anxiety. Such examples could then assist in constructing a more personal formulation of an individual's experience of a particular anxiety disorder, leading to more effective intervention by targeting such symptoms specifically.

References

Ackerman, S. J., Clemence, A. J., Weatherill, R., & Hilsenroth, M. J. (1999). Use of the TAT in assessment of DSM-IV cluster B personality disorders. *Journal of Personality Assessment*, *73*, 422-448.

Ackerman, S. J., Hilsenroth, M. J., Clemence, A. J., Weatherill, R., & Fowler, J. C. (2000). The effect of social cognition and object representation on psychotherapy continuation. *Bulletin of the Menninger Clinic*, *64*, 386-408.

Allen, R. M., Richer, H. M., & Plotnick, R. J. (1964). A study of introversion-extraversion as a personality dimension. *Genetic Psychology Monographs*, *69*, 297-322.

American Psychological Association. (1998). Awards for Distinguished Professional Contributions: John E. Exner, Jr. *American Psychologist, 53*, 391-392

Archer, R. P., & Newsom, C. R. (2000). Psychological test usage with adolescent clients: Survey update. *Assessment*, *7*, 227-235.

Aronow, E., & Reznikoff, M. (1976). *Rorschach content interpretation.* New York: Grune & Stratton.

Baker, R.A. (1990). *They Call It Hypnosis*. Amherst, New York: Prometheus Books.

Belter, R. W., & Piotrowski, C. (2001). Current status of doctoral-level training in psychological testing. *Journal of Clinical Psychology*, *57*, 717-726.

Bornstein, R.F. (2001). The impending death of psychoanalysis. *Psychoanalytic Psychology, 18,* 3-20.

Buck, J. N. (1948). The HTP test. *Journal of Clinical Psychology*, *4*, 151-159.

Burns, R. C., & Kaufman, S. H. (1970). *Kinetic family drawings* (K-F-D)*: An introduction to understanding children through kinetic drawings.* New York: Bruner/Mazel.

Camara, W. J., Nathan, J. S., & Puente, A. E. (2000). Psychological test usage: Implications in professional psychology. *Professional Psychology: Research and Practice, 31*, 141-154.

Cronback, L.J. (1949). Statistical methods applied to Rorschach scores: A review. *Psychological Bulletin, 46,* 393-429.

Cramer, P. (2004). *Storytelling, narrative, and the Thematic Apperception Test.* New York: Guilford Press.

Dawes, R. M. (1994). *House of cards: Psychology and psychotherapy built on myth*. New York: The Free Press.

Dawes, R. M., Faust, D., & Meehl, P. E. (1989). Clinical versus actuarial judgment. *Science*, *243*, 1668-1674.

Douglas, C. (1993). *Translate this darkness: The life of Christiana Morgan*. New York: Simon & Schuster.

Ebbinghaus, H. (1897). Über eine neue method zur prufung geistiger fähigkeiten und ihre anwendung bei schulkindern [On a new method for the testing of intellectual capacityand its application by school children]. *Zeitschrift fur Psychologie und Physiologie der Sinnesorgane*, *13*, 451-457.

Ellenberger, H. F. (1993). *Beyond the unconscious*. Princeton, New Jersey: Princeton University Press.

Endres, J. (2004). The language of the psychopath: Characteristics of prisoners' performance in a sentence completion test. *Criminal Health and Mental Health,14*, 214-226.

Exner, J. E. (1969). *The Rorschach systems.* New York: Grune & Stratton.

Exner, J. E. (1974). *The Rorschach: A Comprehensive System. Vol. 1.* New York: Wiley.

Exner, J. E. (1993). *The Rorschach: A Comprehensive System. Vol. 1. Basic foundations* (3rd. ed.). New York: Wiley.

Exner, J. E. (2001). *A Rorschach workbook for the comprehensive system*(5th. ed.). Ashville, NC: Rorschach Workshops.

Exner, J. E. (2002). The Rorschach archives and museum. *SPA Exchange*, *13(1*), 4.

Exner, J. E. (2003). *The Rorschach: A comprehensive system. Volume 1: Basic foundations* (4th ed.). New York: Wiley.

Fowler J. C., Ackerman, S. J., Speanburg, S., Bailey, A., Blagys, M., & Conklin, A. C. (2004). Personality and symptom change in treatment-refractory inpatients: Evaluation of the phase model of change using Rorschach, TAT, and DSM-IV Axis V. *Journal of Personailty Assessment*, *83*, 306-322.

Frank, G. (1979). On the validity of hypotheses derived from the Rorschach: VI. *M* and the intrapsychic life of individuals. *Perceptual and Motor Skills*, *48*, 1267-1277.

Frank, L. (1939). Projective methods for the study of personality. *Journal of Psychology, 8*, 389-413.

Fuller, G. B., Parmelee, W. M., & Carroll, J. L. (1982). Performance of delinquent and nondelinquent high school boys on the Rotter Incomplete Sentence Blank. *Journal of Personality Assessment, 46(5),* 506-510.

Fuller Torrey, E. (1986). *Witchdoctors and Psychiatrists: The Common Roots of Psychotherapy and Its Future.* New York, NY: HarperCollins.

Garb, H. N. (1998). *Studying the clinician: Judgment research and psychological assessment.* Washington DC: American Psychological Association.

Garb, H. N., Lilienfeld, S. O., Wood, J. M., & Nezworski, M. T. (2002). Effective use of projective techniques in clinical practice: Let the data help with selection and interpretation. *Professional Psychology,33(5),* 454-463.

Gieser, L., & Stein, M. I. (1999). *Evocative images: TheThematic Apperception Test and the art of projection.* Washington, DC: American Psychological Association.

Goldfried, M. R., Stricker, G., & Weiner, I. B. (1971). *Rorschach handbook of clinical and research applications*. Englewood Cliffs, NJ: Prentice-Hall.

Groth-Marnat, G. (2003). *Handbook of psychological assessment (*4th ed.). Hoboken, NJ: John Wiley & Sons Inc.

Groth-Marnat, G. & Roberts, L. (1998). Human figure drawings and House Tree Person drawings as indicators of self-esteem: A quantitative approach. *Journal of Clinical Psychology*, *54*, 219-222.

Gurvitz, M. S. (1951). A forerunner of Rorschach. *Journal of Consulting Psychology*, 15, 120-121.

Hammer, E. F. (1959). Critique of Swenson's "Empirical evaluation of human figure drawings." *Journal of Projective Techniques*, *23*, 30-32.

Handler, L., & Habenicht, D. (1994). The Kinetic Family Drawing: A review of the literature. *Journal of Personality Assessment, 62*, 440-464.

Handler, L., & Reyher, J. (1965). Figure drawing anxiety indices: A review of the literature. *Journl of Projective Techniques, 29*, 305-313.

Harris, D. B. (1963). *Cildren's drawings as measures of intellectual maturity: A revision and extension of the Goodenough Draw-a-man Test.* Orlando: Harcourt Brace.

Hart, G.D. (2001). Descriptions of blood and blood disorders before the advent of laboratory studies. *British Journal of Haematology, 115*, 719-728.

Holsopple, J. Q., & Miale, F. R. (1954). *Sentence completion: A projective method for the study of personality.* Springfield, IL: Thomas.

Hogan, T. P. (2005). 50 widely used psychological tests. In G. P. Koocher, J. C. Norcross, & S. S. Hill III (Eds.), *Psychologists. Desk reference* (2nd ed., pp. 101-104). New York: Oxford University Press.

Hojnoski, R. L., Morrison, R., Brown, M., & Matthews, W. J. (2006). Projective test use among school psychologists: A survey and critique. *Journal of Psychoeducational Assessment*; *24*, 145.

Holaday, M. (2000). Rorschach protocols from children and adolescents diagnosed with posttraumatic stress disorder. *Journal of Personality Assessment, 75(1*), 143-157.

Holaday, M., Smith, D. A., & Sherry, A. (2000). Sentence completion tests: A review of the literature and results of a survey of members of the Society for Personality Assessment. *Journal of Personality Assessment, 74,* 371-385.

Holt, R. R. (Ed.). (1949). The early history of TAT. *The TAT Newsletter*, *3(3)*, 492.

Holtzman, W. H. (1950). Validation studies of the Rorschach Test: Shyness and gregariousness in the normal superior adult. *Journal of Clinical Psychology*, *6*, 343-347.

Hunsley, J., & Bailey, J. M. (1999). The clinical utility of the Rorschach: Unfulfilled promises and and uncertain future. *Psychological Assessment*, *11*, 266-277.

Hunsley, J. & Bailey, J. M. (2001). Whither the Rorschach? *Psychological Assessment*, *13*, 472-485.

Hunsley, J., Lee, C. M., & Wood, J. M. (2003). Controversial and questionable assessment techniques. In S. O. Lilienfield, S. J. Lynn, & J. M. Lohr (Eds.), *Science and Pseudoscience in Clinical Psychology* (pp. 39-76). New York: Guilford Press.

Hy, L. X., & Loevinger, J. (1996). *Measuring ego development* (2nd. ed.). Mahwah, NJ: Erlbaum.

Jensen, A. R. (1958). Personality. *Annual Review of Psychology*, *9*, 295-322.

Joiner, T. E., Schmidt, K. L., & Barnett, K. (1996). Size, detail, and line heaviness in children's drawings as correlates of emotional distress: (More) negative evidence. *Journal of Personality Assessment*, *67*, 127-141.

Karon, B. P. (2000). The clinical interpretation of the Thematic Apperception Test, Rorschach, and other clinical data: A reexamination of statistical versus clinical prediction. *Professional Psychology*, *31*, 230-233.

Kahill, S. (1984). Human figure drawing in adults: An update of the empirical evidence, 1968-1982. *Canadian Psychology, 25*, 269-292.

Keiser, R. E. & Prather, E. N. (1990). What is the TAT? A review of ten years of research. *Journal of Personality Assessment*, *55*, 800-803.

Kent, G. H., & Rosanoff, A. (1910). A study of association in insanity. *American Journal of Insanity*, *67*, 317-390.

Koppitz, E. M. (1968). *Psychological evaluation of children's human figure drawing*. NY: Grune & Stratton.

Lah, M. I. (1989). New validity, normative, and scoring data for the Rotter Incomplete Sentences Blank. *Journal of Personality Assessment, 53(3),* 607-620.

LaRoque, S. D., & Orbzut, J. E. (2006). Pencil pressure and anxiety in drawings: A techno-projective approach. *Journal of Psychoeducational Assessment*, *38*, 381-393.

Leichsenring, F., Rabung, S., & Leibing, E. (2004). The efficacy of short-term psychodynamic psychotherapy in specific psychiatric disorders: A meta-analysis. *Archives of General Psychiatry, 61*, 1208–1216.

Lilienfeld, S. O., Wood, J. M., & Garb, H. N. (2000). The scientific status of projective techniques. *Psychological Science in the Public Interest*, *1*, 27-66.

Lilienfeld, S. O., Wood, J. M., & Garb, H. N. (2001). What's wrong with this picture? *Scientific American*, *284(5),* 80-87.

Little, K. B. & Shneidman, E. S. (1959). Congruencies among interpretations of psychological test and anamnestic data. *Psychological Monographs* (6, Whole No. 476).

Loevinger, J. (1976). *Ego development: Conceptions and theories.* San Francisco: Jossey Bass.

Meyer, G.J., Finn, S.E., Eyde, L. D., Kay, G. G., Moreland, K. L., Dies, R. R., et al. (2001). Psychological testing and psychological assessment: A review of evidence and issues. *American Psychologist*,*56*, 128-165.

Machover, K. (1949). *Personality projection in the drawing of the human figure.* Springfield, IL: Charles C. Thomas.

Machover, K. (1951). Drawing of the human figure: A method of personality investigation. In H. H. Anderson & G. L. Anderson.(Eds.), *An introduction to projective techniques* (pp. 341-369). New York: Prentice Hall.

Matto, H. C. (2002). Investigating the validity of the Draw-A-Person: Screening Procedure for Emotional Disturbance: A measurement validation study with high-risk youth. *Psychological Assessment*, *14*, 221-225.

Matto, H. C., Naglieri, J. A., & Clausen, C. (2005). Validity of the Draw-A-Person: Screening Procedure for Emotional Disturbance (DAP:SPED) in strengths-based assessment. *Research on Social Work Practice,15*, 41-46.

Meyer, G. J. & Kurtz, J. E. (2006). Advancing personality assessment terminology: Time to retire "objective" and "projective" as personality test descriptors. *Journal of Personality Assessment*, *87(3),* 223-225.

Morgan, C. D. & Murray, H. A. (1935). A method for investigating fantasies. *Archives of Neurology and Psychiatry*, 34, 289-304.

Morganthaler, W. (1954).Der kampf um das erscheinen der Psychodiagnostik (The struggle for the publication of *Psychodiagnostics*). *Zeitschrift eur diagnostiche psychologie und perseonlichkeitsforschung*, *2*, 255-271. [An English translation is available upon request from James M. Wood, jawood@utep.edu.]

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

Murray, H. A. (1971). *Thematic Apperception Test: Manual.* Cambridge, MA; Harvard University Press. (Original work published 1943)

Murray, H. A. (1985). Dr. Henry A. Murray replies (Letter to the editor). *Second Century Radcliffe News,* 6(1), 2.

Naglieri, J. A., McNeish, T. J., & Bardos, A. N. (1992). *Draw-A-Person: Screening Procedure for Emotional Disturbance*. Austin, TX: ProEd.

Naglieri, J. A., & Pfeffier, S, I. (1992). Performance of disruptive behavior-disordered and normal samples on the Draw-A-Person: Screening Procedure for Emotional Disturbance. *Psychological Assessment*, *4*, 156-159.

Palmer, L., Farrar, A. R., Valle, M., Ghahary, N., Panella, M., & Degraw, D. (2000). An investigation of the clinical use of House-Tree-Person projective drawings in the psychological evaluation of child sexual abuse. *Child Maltreatment*, *5*, 169-175.

Plante, T.G. (2011). *Contemporary clinical psychology* (3rd ed.). Hoboken, NJ: Wiley.

Popper, K. (1963). *Conjectures and Refutations: The Growth of Scientific Knowledge*. London, UK: Routledge.

Rapaport, D., Gill, M., & Schafer, R. (1946). *Diagnostic psychological testing*. *Vol. 1*. Chicago: Year Book.

Riberio, L. A. & Hauser, S. T. (2009). Ego development and psychosocial functioning in young adults with and without psychiatric history. *Journal of Adult Development, 16(4),* 263-269.

Robinson, G. E. (1992). *Love's Story Told: A Life of Henry A. Murray.* Cambridge, MA: Harvard University Press.

Rohde, A. R. (1946). Explorations in personality by the sentence completion method*. Journal of Applied Psychology, 30*, 169-181.

Rorschach, H. (1921). *Psychodiagnostics: A diagnostic test based on perception*. New York: Grune & Stratton.

Rorschach, H. (1964). *Psychodiagnostics*. New York: Grune & Stratton. (Original work published in German in 1921 and in English in 1942).

Rossini, E. D. & Moretti, R. J. (1997). Thematic Apperception Test (TAT) interpretation: Practice recommendations from a survey of clinical psychology doctoral program accredited by the American Psychological Association. *Professional Psychology: Research and Practice*, *28*, 393-398.

Rotter, J. B., Lah, M. I., & Rafferty, J. E. (1992). *Rotter Incomplete Sentences Blank* (2nd. ed.). Orlando, FL: Psychological Corporation.

Rotter, J. B., & Rafferty, J. E. (1950). *Manual for the Rotter Incomplete Sentences Blank: College form.* New York: Psychological Corporation.

Sattler, J.M. (2008). *Assessment of Children: Behavioral, Social, and Clinical Foundations (5th edition)*. La Mesa, CA: Jerome M. Sattler, Publisher, Inc.

Schneider, G. B. (1978). A preliminary validation study of the Kinetic School Drawing. *Dissertation Abstracts International*, *38 (11-A),* 6628.

Shaffer, T. W., Erdberg, P., & Haroian, J. (1999). Current nonpatient data for the Rorschach, WAIS, and MMPI-2. *Journal of Personality Assessment*, *73*, 305-316.

Shedler, J. (2010). The efficacy of psychodynamic psychotherapy. *American Psychologist, 63,* 98-109.

Shermer, M. (2002). *Why people believe weird things: Pseudoscience, superstition, and other confusions of our time.* New York: Henry Holt & Company.

Sherry, A., Dahlen, E., & Holaday, M. (2004). The use of sentence completion tests with adults. In M. Herson (Editor-In-Chief), M. J. Hilsenroth, & D. L. Segal (Vol. Eds.), *Comprehensive*

handbook of psychological assessment: Vol. 2. Personality assessment (pp. 372-386). Hoboken, NJ: Wiley.

Smith, D., & Dumont, F. (1995). A cautionary study: Unwarranted interpretations of the Draw-A-Person Test. *Professional Psychology: Research and Practice*, *26*, 298-303.

Spangler, W. D. (1992). Validity of questionnaire and TAT measures of need for achievement: Two meta-analyses. *Psychological Bulletin, 112*, 140-154.

Stevens, D., Edwards, K., Hunter, W. & Bridgman, L. (1993). An investigation of the color-affect hypothesis in Exner's Comprehensve System. *Perceptual and Motor Skills, 77*, 1347-60.

Tharinger, D. J., & Stark, K. (1990). A qualitative versus quantitative approach to evaluating the Draw-A-Person and Kinetic Family Drawing: A study of mood and anxiety-disordered children. *Psychological Assessment*, *2*, 365-375.

Thomas, G. V., & Jolley, R. P. (1998). Drawing conclusions: A re-examination of empirical and conceptual bases for psychological evaluations of children from their drawings. *British Journal of Clinical Psychology*, *37*, 127-139.

Vane, J. R. (1981). The Thematic Apperception Test: A review. *Clinical Psychology Review*, 1, 319-336.

Vass, Z. (1998). The inner formal structure of the H-T-P drawings: An exploratory study. *Journal of Clinical Psychology*, *54*, 611-619.

Waehler, C. A. (1997). Drawing bridges between science and practice. *Journal of Personality Assessment*, *69*, 482-487.

Weiner, I. B. (1999). Incremental validity of the Rorschach. *Assessment*, *6*, 327-338.

Weiner, I. B., & Greene, R. L. (2008). *Handbook of personality assessment* . Hoboken, N.J.: John Wiley & Sons.

West, M. M. (1998). Meta-analysis of studies assessing the efficacy of projective techniques in discriminating child sexual abuse. *Child Abuse & Neglect*, *22*, 1151-1166.

Westen, D., Lohr, N. E., Silk, K., Kerber, K., & Goodrich, S. (1989*). Object relations and social cognition TAT scoring manual* (4th. ed.). Unpublished manuscript, University of Michigan, Ann Arbor.

Westenberg, P. M., Siebelink, B. M., Warmenhoven, N. J. C., & Treffers, P. D. A. (1999). Separation anxiety and overanxious disorders: Relations to age and psychosocial maturity. *Journal of the American Academy of Child and Adolescent Psychiatry, 38(8)*, 1000-1007.

Westenberg, P. M., Hauser, S. T., & Cohn, L. D. (2004). Sentence completion measurement of psychological maturity. In M. Herson (Editor-In-Chief), M. J. Hilsenroth, & D. L. Segal (Vol. Eds.), *Comprehensive handbook of psychological assessment: Vol. 2. Personality assessment* (pp. 595-616). Hoboken, NJ: Wiley.

Wood, J. M., Lilienfeld, S. O., Garb, H. N., & Nezworski, M. T. (2000). The Rorschach Test in clinical diagnosis: A critical review, with a backward look at Garfield (1947). *Journal of Clinical Psychology*, *56*, 395-430.

Wood, J. M., Nezworski, M. T., Garb, H. N., & Lilienfeld, S. O. (2001). The misperception of psychopathology: Problems with the norms of the comprehensive system. *Clinical Psychology: Science and Practice*, *8*, 360-373.

Wood, J. M., Nezworski, M. T., Lilienfeld, S. O., & Garb, H. N. (2003). *What's wrong with Rorscach? Science confronts the controversial inkblot test.* New York: Jossey-Bass.

Wood, J. M., Nezworski, M. T., Garb, H. N. (2003). What'sright with theRorschach? *The Scientific Review of Mental Health Practice: Objective Investigations of Controversial and Unorthodox Claims in Clinical Psychology, Psychiatry, and Social Work*, 2(2), 142-146.

Wrightson, L., & Saklofske, D. H. (2000). Validity and reliability of the Draw A Person: Screening Procedure for Emotional Disturbance with Adolescent Students. *Canadian Journal of School Psychology,16(1*), 95-102.

Wysocki, B. A. (1956). Differentiation between introvert-extravert types by Rorschach method as compared with other methods. *Journal of Psychology*, *43*, 41-46.

Zubin, J., Eron, L. D., & Schumer, F. (1965). *An experimental approach to projective techniques.* New York: Wiley.

Footnotes

[1] It appears that a number of health problems, combined with her lack of later development of the test, caused her to ask to be removed as an author (Murray, 1985).

[2] Mixing such vastly different systems is not scientifically or psychometrically sound. As the first author's father has told him on more than one occasion, "You know what you get when you mix five pounds of manure with five pounds of ice cream? Ten pounds of manure." (J.R. Lack, personal communications).