

Assessment and Treatment of Personality Disorders: A Behavioral Perspective

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Abstract

Personality disorders are complex and highly challenging to treatment providers; yet, for clients with these problems, there exist very few treatment options that have been supported by research. Given the lack of empirically-supported therapies for personality disorders, it can be difficult to make treatment decisions for this population. The purpose of this paper is to present our view that basic behavioral principles can be integrated into the assessment and treatment of personality disorders to maximize success with such challenging behavioral patterns. Following a review of well-established behavioral assessment and treatment options, we offer additional suggestions upon which to base treatment: (a) the identification of relevant response classes and (b) the use of functional analysis in personality disorder treatment. We conclude with application of the proposed strategies to the examples of borderline and avoidant personality disorders.

Keywords: Keywords: assessment, treatment, behavior(al) assessment and therapy, personality disorders

According to traditional diagnostic viewpoints represented in the DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision; American Psychiatric Association, 2000), a personality disorder is: “an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual’s culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment” (p. 685). We review issues relevant to a behavioral perspective and the DSM-IV-TR approach to personality disorders below, followed by assessment and treatment issues for personality disorders (both at the nomothetic and idiographic levels), and examples of borderline and avoidant personality disorders. A central thesis of this paper is that a behavioral approach to assessment and treatment can compliment and expand upon a diagnostic approach, for example, by targeting covarying response classes characteristic of the different personality disorders.

The concept of “personality” has historically been eschewed by behaviorists, who focus on external (i.e., environmental), rather than internal, causes of behavior. The purpose of this paper is to present our view that basic behavioral principles can be successfully applied to personality disorders, which have been conceptualized by many as “characterological” in nature and that a behavioral view can fully integrate the DSM concept of personality disorders. Hayes et al. (2006) supported this emphasis on behavior theory by noting that a focus on basic behavioral treatment principles (not just the techniques themselves) makes it easier to confront a wide array of clinical problems. Although one such treatment package for personality disorders does exist, it is designed only for borderline personality disorder. Further, some personality-disordered clients show resistance to the structure of a manualized treatment, leaving much room for uncertainty in the treatment of this population. It is our position that a focus on basic behavioral assessment and treatment principles can aid greatly in clinical decision-making for

clients with personality disorders. As this population presents unique and difficult clinical challenges, this approach is likely to be successful in the absence of readily available treatment packages.

The Relationship between Behavioral Assessment and the DSM system

Prior to presenting a behavioral view on the assessment of personality disorders, we describe the relationship between behavioral assessment and the DSM system. It is our contention that recent versions of the DSM can be useful to behavioral assessors. This viewpoint has been presented previously, in relation to psychopathology in general (Nelson & Barlow, 1981; Nelson-Gray & Paulson, 2004).

Behavioral assessment and psychiatric diagnosis developed on two parallel tracks. Behavioral assessment began informally, as a means of quantifying outcome measures while behavior therapy or behavior modification initially demonstrated its efficacy. The various series of case studies that demonstrated the effectiveness of specific behavior therapy techniques included outcome measures, showing changes in particular target behaviors (e.g., Eysenck, 1976; Ullmann & Krasner, 1965). Even when the case study dealt with a classic diagnosable disorder (e.g., depression), behavior therapists were content with selecting a few salient target behaviors to demonstrate improvements that resulted from behavioral interventions (e.g., very slow speech rate in a chronically depressed man; Robinson & Lewinsohn, 1973). In these early case studies utilizing behavior therapy, no mention was made of formal diagnosis or of changes in covarying behaviors that comprise the diagnostic syndrome. Eventually, behavioral assessment developed as a discipline in its own right, with this stated goal: “The goal of behavioral assessment is to identify meaningful response units and their controlling variables for the purposes of understanding and of altering behavior” (Nelson & Hayes, 1979, p. 1).

The DSM system developed independently of behavioral assessment. The DSM system is based on a medical model of mental illness that had been eschewed by early behaviorists for reasons mentioned earlier – the assumption that behavior has underlying or inner causes, as opposed to environmental causes (Ullmann & Krasner, 1965). However, one major advantage of a diagnostic classification system is that it is absolutely necessary for the development of a clinical science (Adams & Haber, 1984). A diagnostic classification system enhances communication among scientists because it provides labels and precise definitions for the commonalities observed in clinical practice and research: commonalities in behavior or symptoms, etiology, prognosis, and responses to particular types of treatment. Further, classification systems enhance contributions to the research literature. Data can be compiled and hypotheses generated about phenomena from one generation of scientist-practitioners to the next. The alternative, elaborate individual case descriptions, would be highly cumbersome. It is hard to even imagine setting up a database for a clinical science that lacked the organization of a diagnostic system. Additionally, professionals can more easily access a research literature related to a particular client’s presenting problems when the literature is labeled into categories. It would be a near-impossible task to obtain information from a research literature that was not based on short-hand terms, recognizing the commonalities among clients. For example, the research literature on borderline personality disorder has burgeoned, in part because the behaviors that comprise this disorder have a name or unifying construct (Blashfield & Intoccia, 2000).

Other communication functions are greatly simplified by the use of a well-agreed upon classification system. One benefit is in the process of making referrals from one professional to the next. Simply stating the diagnostic labels that are assigned to a client facilitates communication between both the referring source and recipient, and provides a useful short-hand description of the client. A clinician would have very different expectations and perhaps different strategies in providing services to a referral with avoidant personality disorder as opposed to borderline personality disorder. Classification systems also assist in record-keeping and statistical compilations, such as epidemiological records or tallies of the types of clients served by different hospitals or agencies. Diagnosis further facilitates communication between service providers and third-party payers of those services (Miller, Bergstrom, Cross, & Grube, 1981). The number of pre-authorized sessions may differ greatly depending on the diagnosis of the client, and the severity and chronicity of difficulties associated with that diagnosis. It would not be surprising for a third-party payer to pay for inpatient services for someone diagnosed with borderline personality disorder, whereas inpatient services for someone with dependent personality disorder might be questioned.

A final and recent advantage of diagnosis is its utility in indexing empirically-validated treatments, sometimes call empirically-substantiated treatments (Chambless et al., 1996; Chambless et al., 1998; Chambless & Ollendick, 2001). A task force within Division 12 of the American Psychological Association has identified criteria and specific treatments that meet these criteria at two levels of empirical validation: well-established treatments and probably efficacious treatments. At both levels, treatments are listed by disorder. In an ironic turn of fate, the behavioral approach to assessment and treatment that originally ignored or eschewed diagnosis now finds itself claiming to be effective in treating various disorders. There is only one probably efficacious empirically-validated treatment for a personality disorder, Linehan's dialectical behavior therapy (DBT) for individuals with borderline personality disorder (Linehan, 1993a, 1993b). For most if not all disorders, behavioral assessment plays an essential role in supplementing this treatment list; however, this is especially true in the case of personality disorders, since only one personality disorder diagnosis has a related empirically-validated treatment.

Despite these advantages of using diagnostic categories, including their use by behavioral clinicians, several problems have been raised with the diagnostic categories used for personality disorders in particular (Simonsen & Widiger, 2006). Some of the most pertinent problems are summarized here. First is excessive diagnostic co-occurrence. In other words, many clients meet criteria for several personality disorders, and not the criteria for a single diagnostic category. A second problem is inadequate coverage, that is, the existing categories do not adequately reflect the pathological personalities of individuals. This problem is reflected in the great use of the wastebasket category, personality disorder "not otherwise specified." A third problem is the heterogeneity within each diagnostic category. This problem is due to the polythetic nature of the diagnostic criteria where an individual must meet only a portion of the criteria to qualify for that diagnosis. A different individual may meet a different portion of the criteria, yet both would qualify for the same diagnosis. A fourth problem is that the boundary between normal personality functioning and personality disorders is arbitrary and unstable. The boundary is arbitrary in the sense that there is no firm scientific basis to set the threshold of the number of criteria necessary to be met to merit the diagnosis, and hence cross the threshold from a normal personality to a

personality disorder. The boundary is unstable in the sense that there are changes, albeit minor, in diagnostic criteria and diagnostic cut-offs across the various editions of the DSM. Finally, the current categories of personality disorders have not generated research programs, with the exceptions of the research on borderline and antisocial personality disorders. The diagnostic system for personality disorders has not expanded the scientific basis of clinical research in the personality disorders, as would be hoped. In response to these criticisms, an alternative has been proposed to the use of categories in the diagnosis of personality disorders, a dimensional model of personality disorders. Though a dimensional conceptualization of pathological personality styles is appropriate for many reasons, this system would likely raise concern for both clinicians and researchers.

Diagnostic Assessment of Personality Disorders

There clearly exist both advantages and disadvantages to the current psychiatric diagnostic system. Of relevance to personality disorders, there is another advantage of the categorical approach to classification: assessment tools linked with specific diagnoses. These nomothetic devices include structured and unstructured interviews, broadband personality disorder questionnaires that assess for a wide range of personality dysfunction and psychopathology, and questionnaires specific to particular personality disorders. We view this diagnostic approach as complimentary towards treatment, but insufficient on its own.

Interviews

Structured Clinical Interview (SCID-II). The SCID-II (First & Gibbon, 2004) is a structured interview designed to closely mirror the language of the *DSM-IV-TR* personality disorder criteria. It assesses symptoms typical of 12 personality disorders included in the *DSM-IV-TR* as diagnoses or possible diagnoses for further study. The clinical interviewer is provided with questions and probes to ask of the client or a collateral and rates each symptom as present, absent, or subthreshold. The SCID-II interview can be administered after screening with a 119-item self-report personality questionnaire, the SCID-II Screener, which allows the interview to be shortened to assess only for personality disorders endorsed on the questionnaire.

Many studies have examined the reliability and validity of SCID-II diagnoses. Interrater reliability appears to be generally acceptable to good. Maffei (1997) found that kappas ranged from .83 to .97, with the exception of depressive personality disorder (kappa = .65). Arntz et al. (1992) found kappas ranging from .65 to .85. Twelve-month test-retest reliability was generally acceptable to good, with the exception of avoidant personality disorder (Weiss, Najavits, Muenz, & Hufford, 1995). First and Gibbon (2004) suggest that the SCID-II has similar validity and reliability compared to other instruments used to diagnose personality disorders. The SCID-II offers a generally reliable and valid method of diagnosing personality disorders. However, unlike some questionnaire methods, it cannot suggest whether a client may be over- or under-reporting symptoms. Therefore, the SCID-II should be used in conjunction with information from other sources, such as collaterals or school and work records.

Unstructured Interviews. Unstructured interviews are commonly used to diagnose personality disorders. Because they allow the interviewee more control over the direction of the conversation,

personality disordered clients typically prefer them to more structured interviews. Although unstructured interviews are excellent for building rapport and eliciting general information, they may provide less specific diagnostic information than structured interviews, especially if time is limited.

Interviews with Collaterals. Interviews with collaterals, whether structured or unstructured, can be essential in confirming a personality disorder diagnosis because many personality disorders are “ego-syntonic,” or consistent with the person’s integrity, values, and goals. As such, clients with a personality disorder may not display insight that their behaviors differ from societal norms. For example, a man with antisocial personality disorder may not be aware that others regard his behavior as unduly calculating and self-serving. Rather, he may regard his behavior as a perfectly natural attempt to get ahead in the world.

Collateral reporters also safeguard against a number of possible sources of error. Individuals being assessed for personality disorders may be motivated to “fake bad” for a number of reasons, including gaining access to services (e.g., disability payments) or eliciting sympathy. Alternatively, they may be motivated to conceal the extent of their problems due to the fear of negative evaluation or a need to appear psychologically healthy for court or job evaluations. Finally, the symptoms of some personality disorders may cause the person to exaggerate or underestimate distress. For example, the dramatic verbal narratives produced by clients with a histrionic style may provide inaccurate descriptions of their normal functioning.

Personality Disorder Questionnaires

Millon Clinical Multiaxial Inventory, Third Edition (MCMI-III). The MCMI-III (Millon, 1983) includes 175 true/false questions based upon Millon’s theory of personality and psychopathology. It is designed to diagnose each DSM-IV personality disorder as well as several personality disorders previously included in the DSM-IV or included for future study (e.g., passive aggressive personality disorder, self-defeating personality disorder) and some Axis I conditions (e.g., anxiety, substance dependence, thought disorder). The MCMI-III also includes scales designed to assess random responding and “faking good” or “faking bad.” Normed on a sample of 998 males and females from mental health clinics, inpatient facilities, and forensic settings, the most recent revision also includes norms from 1,676 prison inmates.

There have been many evaluations of the psychometric properties and diagnostic utility of the MCMI. Craig (1999) examined the test-retest reliabilities of the scales, and found the median correlations across studies were acceptable ($r = .78$). Convergent validity with other assessment devices and clinical ratings has been generally acceptable, but discriminant validity appears to be low (Rossi, Hauben, Van den Brande, & Sloore, 2003), especially for avoidant, schizoid, and schizotypal personality disorders (Blackburn, Donnelly, Logan, & Renwick, 2004). Because of this, the MCMI is a useful adjunct to clinical decision-making, but should not be used in isolation (Rossi et al., 2003).

Personality Assessment Inventory (PAI). The PAI (Morey, 1991) includes 344 four-point Likert scale questions. In addition to assessing the presence of Axis I conditions, it assesses features of paranoid, schizotypal, schizoid, borderline, and antisocial personality disorders. It also includes validity scales and

scales to assist in treatment. The PAI was normed on a sample of over 3,500 individuals from community, college, and clinical settings, and internal consistency estimates range from .75 to .79 for individual scales (Morey, 1991). The borderline scale correlates significantly with the number of borderline criteria met on the SCID-II Interview (Jacobso, Blais, Baity & Harley, 2007) and with total scores on the MMPI-2 Personality Disorders Scale (Kurtz, Morey, & Tomarken, 1993). However, some studies raise questions about factor structure and divergent validity (Boyle, Ward, & Lennon, 1994). In addition, the PAI does not assess for all personality disorder diagnoses.

Minnesota Multiphasic Personality Inventory, Second Edition (MMPI-2). The MMPI-2 (Butcher, Graham, Ben-Porath, Tellegen, Dahlstrom, & Kaemmer, 1989) is a 567-item true/false questionnaire designed to assess for psychopathology, normal personality variation, and coping skills. The MMPI-2 includes validity scales to check for random responding, defensiveness, and “faking bad” or “faking good.” The MMPI-2 was developed with empirical criterion keying, a theory-free approach, and was normed on a diverse sample of 2,600 adults.

Rather than assessing for the presence of particular personality disorders, the MMPI-2 assesses for symptoms that are often key components, such as paranoia, antisocial behavior, and dependency. These scales should not be interpreted in isolation, but rather considered within the broader pattern of clinical elevations on all MMPI-2 scales. Because the MMPI-2 was not designed for the sole purpose of diagnosing personality disorders, one should not interpret an elevation on the Dependency scale, for example, as sufficient for a diagnosis of dependent personality disorder. Rather, this information could be used as one important piece of the assessment picture.

Other questionnaires. There also exist questionnaires to assess for specific personality disorder diagnoses. A partial list includes: the Borderline Syndrome Index (Conte, Plutchik, Karasu, & Jerrett, 1980), the Borderline Personality Questionnaire (Claridge & Broks, 1984) the Narcissistic Personality Inventory (Raskin & Terry, 1988), the Schizotypal Personality Questionnaire (Raine, 1991), the Schizotypal Traits Questionnaire (Claridge & Broks, 1984), and the Dependent Personality Questionnaire (Tyrer, Morgan, & Cicchetti, 2004). Although these questionnaires are convenient and easy to administer, many of them have psychometric limitations, such as less than ideal internal consistency, reliability, and discriminant validity. Therefore, these questionnaires should only be used as initial screening devices followed up by interviews and standardized questionnaires such as the MCMI.

This discussion of diagnostic assessments includes advantages and difficulties inherent in each method, and any clinician might reasonably wonder which of these approaches is most useful with personality-disordered clients. We recommend beginning with an unstructured interview, as this is useful for building rapport and eliciting information about the specific types of impairment the client is experiencing (i.e., potential target behaviors). Following, a structured interview can be used to confirm or rule out specific diagnostic impressions. Finally, an assessment instrument that includes information about the validity of the client’s self-report is useful, as it is important to have information about the extent to which a client is possibly misrepresenting symptoms. The MCMI-III includes information regarding the validity of the client’s report and can supplement previously-gathered diagnostic information. Diagnostic information is useful for treatment, especially in cases for which an empirically-

based treatment protocol is available. However, it is our view that a focus on target behaviors can circumvent many of the difficulties that arise in treating personality-disordered clients. Therefore, we now turn to a discussion of behavioral assessment methods to be used in conjunction with diagnostic assessment.

The Necessary Addition of Behavioral Assessment to Diagnosis

Historically, three goals have been stated for behavioral assessment: (a) to identify target behaviors or treatment goals; (b) to select a treatment strategy; and (c) to evaluate the effectiveness of the treatment strategy (Nelson & Hayes, 1986; Nelson-Gray & Paulson, 2004). In addition to diagnosis, various behavioral assessment strategies are also necessary to accomplish these three goals.

Selection of Target Behaviors or Treatment Goals

An early step in a program of behavior assessment is to identify a class of target behaviors on which the searchlight of assessment can be focused (Hawkins, 1986). Here, it is important to keep in mind that behavior can take both overt and covert forms. A more contemporary term for target behaviors is treatment goals. The DSM, while avoiding the behavioral language of target behaviors, specifies a class of covarying behaviors in the operational criteria for each diagnosis (Nelson & Barlow, 1981). When the clinician observes a criterion that, in part, characterizes a disorder, he or she is provided with a ready-made list of likely concomitants that can be targeted and observed in greater detail. For example, if a person complains that he or she avoids social situations because of anxiety about possible disapproval, the behavioral assessor should inquire about all seven symptoms or behaviors that comprise avoidant personality disorder.

Nonetheless, the task of treatment goal selection is incomplete at this point. The treatment goals of the individual client must be specified. The diagnostic criteria of the DSM are relatively specific, but the diagnostic criteria contain only categories of symptoms. It must be determined which of the diagnostic criteria are applicable to this particular client, as well as specifying the content within that diagnostic criterion that might form a treatment goal for the individual client. For example, in the case of avoidant personality disorder, what are some social situations that the client currently avoids and would like to be able to approach? Additionally, the client may provide other treatment goals that are not at all included in the diagnostic criteria for their disorder. Going along with the previous example, the client seeking treatment for avoidant personality disorder might want to lose weight and improve the quality of her relationships with her husband and children.

Finally, the values of the client must be included in selection of treatment goals. Behavior therapy has long recognized the role of the client in specifying goals: "The practice of behavior therapy is typically guided by a contractual agreement between both client and therapist specifying the goals and methods of intervention" (Davison & Stuart, 1975, p. 755). A more contemporary recognition of the role of client values in the selection of treatment goals is seen in the work of Hayes and his colleagues in acceptance and commitment therapy (ACT). "ACT is at its core a behavioral treatment. Its ultimate goal is to help the client develop and maintain a behavioral trajectory in life that is vital and valued. All ACT techniques are eventually subordinated to helping the client live in accord with his or her chosen

values...Helping the client identify valued life goals...and implement them in the face of emotional obstacles...both directs and dignifies ACT” (Hayes, Strosahl, & Wilson, 1999, p. 205). In ACT’s values assessment, life areas such as family relations, career/employment, and spirituality are taken into account. Within valued life areas, the client is asked to identify concrete goals related to those areas. This view of clients as humans capable of verbal behavior indicating values and choices does not usually emanate from the *DSM* system.

In addition to selecting treatment goals in behavioral assessment, the client’s strengths are identified as well. For example, a person with avoidant personality disorder may be a very good housekeeper and be a dependable member of her church, where she feels comfortable. Note that this strength-based assessment is not included in the pathology-based diagnostic process.

When treatment goals are selected through behavioral assessment, a wide range of assessment strategies are usually employed. The range of behavioral assessment techniques used has been neatly summarized by Haynes, Nelson, Thacher, and Kaholokula (2002). These techniques include: observations in the natural environment, role-playing, questionnaires, interviews, self-monitoring, and psychophysiological measures.

Selection of a Treatment Strategy

Once target behaviors (or treatment goals) have been selected, a second goal of behavioral assessment is the selection of a treatment strategy. The link between assessment and treatment has been recognized as especially important in behavioral assessment. Three different approaches within behavioral assessment used to select treatment strategies have been summarized by Nelson (1988). These strategies are briefly described here, and related more specifically to personality disorders in subsequent sections.

First is the use of diagnosis. A major contribution of DSM to behavioral assessors is the list of empirically-validated treatments, described earlier. These treatments, most of which are behavioral and cognitive-behavioral in nature, are indexed entirely by diagnosis. A second strategy is the identification and modification of critical response classes. Most clients present with multiple behavior problems. The problems may be unrelated to each other, or the problems may covary in some systematic fashion (as in the case of sets of DSM diagnostic criteria). Some treatment manuals have been developed which focus not on diagnostic categories, but rather on problematic response classes, such as excessive anger or lack of assertiveness. The third strategy that relates assessment and treatment is the functional analysis. In the functional analysis, the variables presently controlling the target behavior are identified in assessment and subsequently modified in treatment (Goldfried & Pomeranz, 1968). The antecedent and consequent environmental variables, and sometimes the biological or cognitive variables, of which the problem behavior is a function, are identified in assessment. The assumption is that if these maintaining variables are altered in treatment, then the problem behavior will improve. In Ferster’s words, “Such a functional analysis of behavior has the advantage that it specifies the causes of behavior in the form of explicit environmental events that can be objectively identified and that are potentially manipulable” (1965, p. 11).

Selection of Outcome Measures

A final goal of behavioral assessment is the selection of treatment outcome measures. In this age of managed care, it behooves any clinician (and not only scientist-practitioner clinicians) to obtain client outcome measures. The same types of measures that are used in the initial assessment to identify the client's treatment goals may be administered as outcome measures. Haynes et al. (2002) and Cone (2001) have provided excellent summaries of the range of these behavioral assessment techniques. Nelson (1981) and Hayes, Barlow, and Nelson-Gray (1999) have provided an overview of guidelines for the collection of outcome measures. Sometimes, single-subject experimental designs are used as well, to more fully evaluate the effectiveness of a behavioral intervention (Hayes et al., 1999).

Functional Analysis in Personality Disorder Assessment

Assessments that clarify a client's diagnostic status may suggest useful nomothetic treatment options. However, behavioral assessment approaches can provide idiographically-based intervention suggestions about controlling variables which may enhance therapeutic change for a personality-disordered client already engaged in treatment (Nelson-Gray & Farmer, 1999). The functional analysis is a cornerstone of behavioral assessment, and this method certainly has implications for the assessment of personality disorders. Thus, although we introduce it above, its utility necessitates additional comment.

We have defined functional analysis as the identification of a target behavior and the current environmental conditions (i.e., antecedents and consequences) maintaining that behavior. Because functional analysis involves identifying conditions that can be altered in order to change a target behavior, information ascertained during a functional analysis can also be used to guide treatment. Therefore, this form of behavioral assessment is tied directly to treatment, which we discuss in greater detail later (see Farmer, 2000, and Nelson-Gray & Farmer, 1999, for reviews of the behavioral assessment of personality disorders).

To elaborate on the basic components of functional analysis, this form of assessment includes the identification of (a) a target behavior or response in observable and measurable terms, (b) antecedent stimuli that precede the behavior, (c) consequences that follow the behavior and function to increase (i.e., positively or negatively reinforce) or decrease (i.e., positively or negatively punish) the frequency of it, and (d) a description of organismic or individual difference variables (e.g., learning history or physiological states) that may be helpful for understanding the maintenance of a targeted behavioral repertoire (Goldfried & Sprafkin, 1976; Nelson & Hayes, 1986; Nelson-Gray & Farmer, 1999).

To capture these elements of a functional analysis, we propose application of the SORC model (Figure 1; Goldfried & Sprafkin, 1976). SORC is an acronym for Stimulus-Organism variables-Responses-Consequences. Within the SORC model, responses (behaviors) are viewed as the result of an interaction between organism variables (biology and past learning history) and current environmental variables (antecedent stimuli and consequences).

Despite descriptive views of personality disorders as "inflexible," "enduring," and "stable over time" (APA, 2000, p. 685), recent empirical findings indicate that the severity of personality disorder

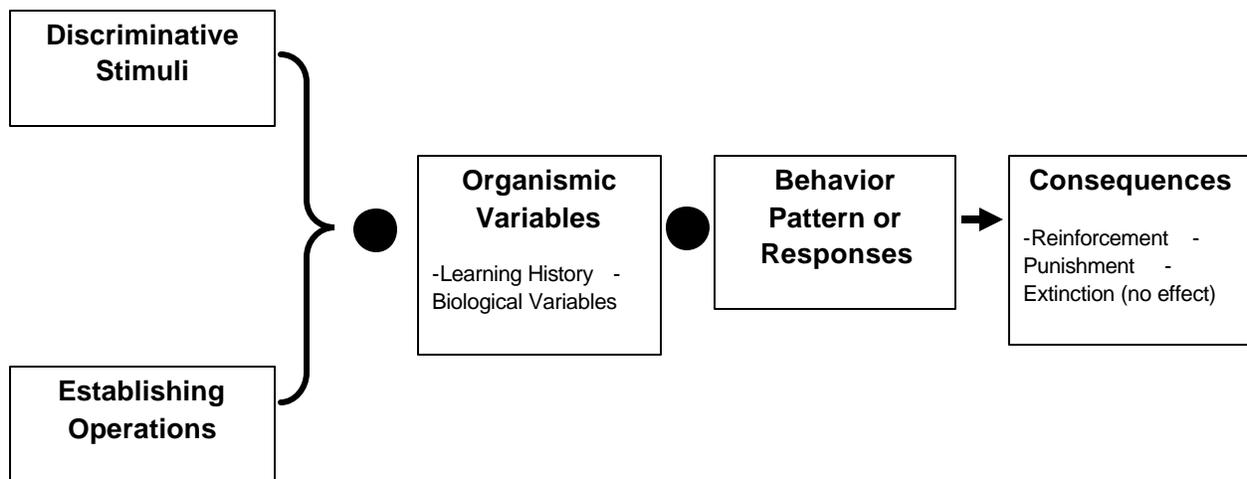


Figure 1. Summary of the SORC Model.

From "Functional Alternatives to Traditional Assessment and Diagnosis," by W.C. Follette, A.E. Naugle, and P.J.N. Linnerooth. In M.J. Dougher (Ed.), 2000, *Clinical Behavior Analysis* (pp. 99-125). Reno, NV: Context Press. Copyright , 2000 by Context Press. Adapted with permission.

symptoms tends to decrease over time (Lenzenweger, 2006; Paris, 2003; Paris & Zweig-Frank, 2001; Zanarini, Frankenburg, Hennen, & Silk, 2003). These findings indicate that personality disordered behavior is not immutable and that functional analysis may elucidate any modifiable variables that may improve treatment outcome.

Consideration of SORC components provides a solid behavioral framework for personality disorder assessment. Initially, consideration of *responses* is necessary for diagnosis of personality disorders. Consistent with Lang's (1968) triple response system, motoric, physiological, and cognitive responses are included in this component of the SORC model. For example, diagnostic features of borderline personality disorder include motoric responses (e.g., self-injurious behavior) and cognitive responses (e.g., identity disturbance and unstable self-image). Further, diagnostic features of avoidant personality disorder also include motoric response (e.g., avoid novel interpersonal situations) and physiological responses (e.g., tachycardia, blushing, sweating, tension). Consideration of stimuli and *consequences* is necessary in setting the stage for a behavior to occur, and increasing or decreasing the frequency of current behaviors as a result of contingent responding (e.g., a significant other negatively reinforcing a borderline personality-disordered client who threatens to cut her arm by withdrawing a demand or ceasing an argument), respectively. These controlling variables may be altered in treatment and are therefore particularly central in the assessment of personality disordered clients prior to treatment. Consideration of *organismic* variables may also elucidate more historical causes of response classes and how maintaining factors have emerged over time by identifying past learning history (e.g., consistent positive reinforcement for the display of overly reliant behaviors during childhood for someone diagnosed with a dependent personality disorder) and physiological differences (e.g., temperamentally-based behavioral approach tendencies among people diagnosed with antisocial or borderline personality disorders).

We have previously reviewed potential variables related to personality-disordered behaviors that may cause and maintain maladaptive response classes (Nelson-Gray, Mitchell, Kimbrel, & Hurst, 2007). Identification of these response classes in a functional analysis, conceptualized within the SORC model, may indicate potential hypothesis regarding controlling variables and potentially effective treatment strategies. If there are changes in the contingencies that maintain the problem behavior associated with a personality disorder response class, the frequencies of the problem behavior should decrease or increase as a function of those changes. However, any functional analysis of personality disorder behaviors should consider a number of caveats we have previously discussed (Nelson-Gray et al., 2007). For example, we have previously reviewed that (a) the presence of multiple response classes associated with two or more personality disorders may be exhibited and render the scope of response classes to be included in the functional analysis extensive, (b) the behavioral repertoire of a person diagnosed with a personality disorder may include topographically dissimilar forms of behavior that comprise a functional response class and thus make functional response classes difficult to define, and (c) various contingencies may maintain a single response class within one person. In terms of the latter, all of these maintaining variables may be difficult for a clinician to discern. Therefore, clinicians should consider multiple contingencies influencing the behavior of personality-disordered clients. The premature cessation of a functional analysis that has identified only one or two maintaining variables, for example, may ultimately delay progress in treatment following assessment. Such considerations may improve the quality of a functional analysis and establishing hypotheses about controlling variables that are affecting target behaviors in a person diagnosed with a personality disorder (see Nelson-Gray et al., 2007, for additional discussion and details regarding maintenance factors of personality disorders).

Methods of Functional Analysis

The utility of functional analysis in the behavioral assessment of personality disorders is clear; however, questions may arise as to how this procedure should be conducted with such a challenging population. Unstructured interviews are one efficient way of discerning SORC variables. Individuals with personality disorders and their significant others can often verbally report on controlling stimuli, the client's responses, and the consequences. Because clients with personality disorders may not be aware of the function of various behaviors (e.g., the reinforcement provided by a significant other who increases support and reassures the person he or she will not leave after suicidal gestures), the assessor may have to probe for events that typically precede target behaviors and reactions of friends, family, and others in the client's life. Questioning clients about their emotional responses to those reactions may make the function of a particular behavior more transparent to both the assessor and person being assessed. Unstructured interviews can also probe for organism variables mentioned previously, such as a learning history involving particular behavioral responses.

Self-monitoring can also be used to develop records of events and circumstances immediately preceding and following the target behaviors. Self-monitoring should also include monitoring emotions and thoughts throughout the time period surrounding the target behavior in order to identify particular internal reactions that predispose the person to act in maladaptive ways. In situations where target

behaviors are not frequent enough to allow self-monitoring, role-playing can be used. The person should be directed to role play him or herself acting in a situation that typically or has recently evoked a target behavior. For example, with a woman who self-mutilated after an argument with her boss, the assessor may role-play the boss while the woman plays herself. Assessment procedures should encourage her to voice the emotions and thoughts arising from the situation. In role-playing, the assessor is able to systematically alter stimulus conditions to determine exactly what provokes a target behavior.

Finally, direct observation provides an excellent and ecologically-sound behavioral assessment device. Although typically used to assess the function of children's target behaviors, observation can be modified to assess adult personality dysfunction. The assessor often has the chance to observe the person interacting with a receptionist or significant others in the waiting room, and the assessor may increase observation time by asking the person to bring significant others into session. Observation of these interactions may indicate that a family member typically sets up certain stimulus conditions or responds to the person in typical ways that induce the target behavior. For more structured approaches to conducting a functional analysis, see guidelines from Repp and Horner (1999).

From Behavioral Assessment to Treatment:

Selection Based on Manualized Treatments, Response Classes, and Functional Analysis

Thus far, we have reviewed methods of diagnostic and behavioral assessment for personality disorders. Identification of target behaviors through assessment should certainly guide decisions regarding treatment selection. Therefore, another purpose of this paper is to review behaviorally-based treatments for personality disorders and the associated response classes that have been identified through the process of assessment.

Manualized Treatments for Personality Disorders

With the exception of borderline personality disorder (and to a lesser degree, avoidant personality disorder), there has been very little research concerning the efficacy of manualized treatments for personality disorders, especially compared to the extensive treatment literature for Axis I disorders. This section primarily focuses on manualized treatments that have been empirically tested in studies targeting specific personality disorder symptoms. There will also be some discussion of manualized treatments that have been implicated in the treatment of personality disorders, but have not yet been empirically tested with personality disorder populations.

Dialectical Behavior Therapy. DBT (Linehan, 1993a, 1993b) is a broad-based cognitive-behavioral approach that is listed as a probably efficacious treatment for borderline personality disorder. It includes both individual psychotherapy and psychosocial skills training (often conducted in group format). Based on Linehan's (1993a) dialectical and biosocial theory of borderline personality disorder, DBT's theoretical orientation to treatment is a blending of three viewpoints: behavioral science, dialectical philosophy, and Zen practice. Originally developed as a means for decreasing parasuicidal behavior, the individual therapy component focuses primarily on motivational issues. Examples include

the motivation to stay alive (as many clients with borderline tendencies experience suicidal ideation), the goal of replacing maladaptive thoughts and actions with skillful behavior, and the commitment to build a life worth living. The skills training component focuses on the modules of mindfulness, distress tolerance, interpersonal effectiveness, and emotion regulation. Recently, Miller, Rathus, and Linehan (2007) published a manual providing guidelines for the use of DBT with an adolescent population, specifically adolescents who display borderline tendencies such as suicidal ideation. They include a fifth module for this population – “walking the middle path” – which primarily targets adolescent-family conflict.

Much of the outcome research on DBT has compared it to a standard intervention (or treatment-as-usual; TAU). Although a thorough review of all DBT outcome studies is beyond the scope of this paper (see Smith & Peck, 2004, for a more thorough review), a number of well-controlled randomized clinical trials have been conducted and yield efficacious results in improving borderline symptoms and functional impairment (Koons et al., 2001; Linehan et al., 1991; Linehan, Comtois, et al., 2006; Linehan, Dimeff, et al., 2002; Linehan, Schmidt, Dimeff, Craft, Kanter, & Comtis, 1999; Turner, 2000; Verheul, van den Bosch, Koeter, de Ridder, Stijnen, & van den Brink, 2003). We review a few notable findings below.

Linehan, Armstrong, Suarez, Allmon, and Heard (1991) compared a group of 22 parasuicidal females with borderline personality disorder who underwent TAU with 22 matched subjects who participated in DBT for one year. The authors reported that, compared to controls, those who participated in DBT experienced significant reductions in hopelessness, depression, anger, suicidal acts, dissociation, and frequency of parasuicidal behavior. In another study that specifically addressed the interpersonal problems experienced by borderline clients, Linehan, Tutek, Heard, and Armstrong (1994) found that participants who completed DBT had significantly better scores on measures of anger, interviewer-rated global social adjustment, and the Global Assessment Scale. They also tended to rate themselves better on overall social adjustment than did those who participated in TAU. Using an inpatient sample in the United Kingdom, Low, Jones, Duggan, Power, and MacLeod (2001) assessed female patients diagnosed with borderline personality disorder on self-harm rates and on a number of psychological variables, pre-, during- and post-DBT, including a 6-month follow-up. They noted a significant reduction in acts of self-harm during therapy, which was maintained at 6-month follow-up. They also reported a reduction in dissociative experiences and an increase in survival and coping beliefs, along with improvements in depression, suicidal ideation, and impulsivity. As self-harm, suicidal ideation, and potentially dangerous impulsive behavior are among the most impairing of the borderline personality disorder symptoms, the results of these studies are quite meaningful in terms of providing support for DBT intervention.

Cognitive-Behavioral Therapy. When we discuss cognitive-behavioral therapy (CBT), we are referring to manualized treatments that include both cognitive and behavioral components. Cognitive components typically include: identification and evaluation of automatic thoughts, cognitive restructuring, and examination of intermediate and core beliefs (Beck, Rush, Shaw, & Emery, 1979). Behavioral components differ from cognitive components in that they do not rely on the accurate identification of thought processes and instead include relaxation techniques, exposure (imaginal or in-vivo), pleasant events scheduling, and role-playing. Often, the use of “cognitive therapy” also includes a number of behavioral components, and therefore may be classified as “CBT.” Behavior therapy, conversely,

typically refers to a treatment that involves one or more behavioral components without any substantial cognitive component.

There is a fair amount of research examining the efficacy of cognitive-behavioral techniques in treating personality disorders and, in general, the results are promising. Although a thorough review of this research is beyond the scope of this paper, we briefly present a few notable studies. For example, Davidson, Norrie, Tyrer, Gumley, Tata, Murray, et al. (2006) compared TAU to cognitive-behavioral therapy plus TAU in a sample of 106 outpatients with borderline personality disorder. At the end of one year of treatment, the CBT plus TAU group showed significant improvement in number of suicidal acts, symptom-related distress, state anxiety, and dysfunctional beliefs over the TAU group.

Strauss et al. (2006) examined the efficacy of Beck's cognitive therapy for personality disorders (Beck, Freeman, & Davis, 2004) in 30 individuals with avoidant personality disorder or obsessive-compulsive personality disorder. After 12 to 16 months of weekly sessions, participants significantly improved in personality disorder symptomology and level of depression. Similar results were reported by Ng (2005), who conducted a pilot-study evaluating the efficacy of cognitive therapy in treating individuals with obsessive-compulsive personality disorder.

Finally, Muran, Safran, Samstag, and Winston (2005) compared the efficacy of short-term dynamic therapy, CBT, and brief relational therapy in a sample of 128 individuals with avoidant, dependent, and obsessive-compulsive personality disorders and personality disorder "not otherwise specified." All treatments involved 30 weekly sessions. The CBT was largely based on Beck et al.'s (2004) cognitive therapy for personality disorders and involved such activities as self-monitoring, behavioral exercises, and cognitive restructuring. At termination, many of the CBT participants showed clinically significant changes in general functioning (50%), interpersonal problems (40%), patient-reported target complaints (69%), and therapist-reported target complaints (60%). In general, the results of these studies, and others, support the use of cognitive-behavioral strategies in treating personality disorders.

Group Cognitive-Behavioral Therapy. There is also evidence for the efficacy of CBT that is conducted in group format. Providing treatment in the form of group therapy may be particularly beneficial in addressing and improving interpersonal difficulties that are common to personality disorders. This rationale has been applied to the treatment of avoidant personality disorder specifically in several empirical studies.

In studies conducted by Stravynski, Lesage, Marcouiller, and Elie (1989); Renneberg, Goldstein, Phillips, and Chambless (1990); and Alden and Capreol (1993), groups of individuals diagnosed with avoidant personality disorder met for group therapy involving some or all of the following cognitive-behavioral components: communication skills-training, role rehearsal, making positive self-statements, systematic desensitization, in-vivo exposure, and modeling. Renneberg et al. (1990) found that after four 8-hour sessions, many participants significantly improved on levels of social anxiety, social avoidance, and depression. Furthermore, these improvements were generally sustained at a 15-month follow-up assessment. Stravynski et al. (1989) reported significant improvements in social anxiety, social avoidance, role-play performance, depression, and daily functioning in 21 participants with avoidant personality

disorder after ten sessions of group CBT. Alden and Capreol (1993) divided participants with avoidant personality disorder into different treatment groups (graduated exposure, skills-training, and intimacy focused skills training) depending on their specific interpersonal problems. In general, the results showed significant improvements in levels of social anxiety and social performance; however, the specific improvements were dependent on the combination of treatment group and interpersonal problem of the individual participant. Overall, this research indicates that group therapy can provide a useful format for implementing CBT for personality disorders, though improvements seem to be particularly likely for clients with avoidant personality disorder.

Third Wave Therapies. In addition to DBT, other “third wave” behavioral therapies (Hayes, Follette, & Linehan, 2004) such as ACT and functional analytic psychotherapy (FAP; Kohlenberg & Tsai, 1991) are grounded in an empirical, principle-focused approach. Such therapies are particularly sensitive to the context and functions of a client’s distress and thus tend to emphasize contextual and experiential change strategies in addition to more direct and didactic ones. These treatments tend to seek the construction of broad, flexible, and effective repertoires over an eliminative approach to narrowly defined problems (Hayes et al., 2004). Of relevance to the present discussion, these approaches have been implicated in the treatment of individuals with personality disorders, as they share an emphasis on mindfulness and acceptance of emotional distress (Hayes et al., 2006).

Functional Analytic Psychotherapy. FAP has been implicated in the treatment of personality disorders (Callaghan et al., 2003). Briefly stated, FAP is a behavioral treatment that utilizes the therapeutic relationship to improve interpersonal difficulties. More specifically, FAP is a behavior analytic approach to therapy that uses reinforcement and punishment principles to modify problematic in-session behaviors. FAP is interpersonal in that it emphasizes the importance of the client-therapist relationship and how it can be used for therapeutic change. These in-session behaviors are ultimately interpersonal exchanges that likely reflect interpersonal behaviors that occur outside of session as well. In other words, FAP assumes that (a) most client difficulties occur in the context of (or a result of) interpersonal problems, (b) the therapist’s in-session contingent, natural responding to the client’s behavior as it occurs is the proposed mechanism of change, and (c) reinforcement of interpersonal behaviors is more effective if the reinforcer is delivered closer in time and space to behavior. Given these assumptions, the therapist has the opportunity to use the therapeutic relationship to help the client build more effective interpersonal skills by responding to client behaviors in-session and helping the client establish new responses to the therapist. Thus, the primary objectives in FAP are to identify clinically relevant behaviors (CRB 1’s), to decrease the frequency of CRB 1’s, to facilitate the increase of adaptive clinically relevant behaviors that occur in-session (CRB 2’s), and to facilitate the client’s interpretation of these improvements (CRB 3’s). When CRB 3’s occur, the therapist provides a functional interpretation of the client’s behavior (i.e., provides comparisons between in-session events and daily life events that will facilitate generalization of in-vivo improvements). For a more in-depth discussion of FAP principles and activities, the reader is referred to Kohlenberg and Tsai (1991).

Callaghan et al. (2003) present the results of a case study with a 23 year-old female seeking treatment for histrionic and narcissistic personality disorder features. After twenty-three 50-minute FAP sessions, the participant showed self-reported and therapist-observed improvements in problematic

interpersonal behavior. This study is best viewed as an example of the application of FAP, rather than as evidence of efficacy, particularly because it is a case study. To our knowledge, no larger scale studies of FAP and personality disorders exist.

Acceptance and Commitment Therapy. In addition to FAP, other “third wave” treatments that have shown efficacy for Axis I disorders are now being implicated in the treatment of personality disorders. ACT (Hayes et al., 1999) emphasizes the acceptance of negative emotions, moods, and other internal states, as opposed to “fighting” or “struggling” against them. This acceptance strategy is designed to reduce experiential avoidance that may be functionally impairing to individuals. ACT also emphasizes the commitment towards achieving goals and performing behaviors in service of one’s values in life (e.g., family, spirituality, education). The application of ACT to personality disorders has been outlined by Strosahl (2005). Efficacy studies of ACT in non-Axis II groups may be informative in the treatment of Axis II pathology.

The efficacy of ACT in the treatment of outpatients presenting with delusions or hallucinations has been studied by Bach and Hayes (2002). In this study, 80 recently discharged outpatients participated in TAU or TAU plus four individual ACT sessions (TAU + ACT). At a four month follow-up, participants in the TAU + ACT group had a significantly lower rate of re-hospitalization than the TAU group (20% versus 40%). The authors attribute this difference to acceptance of positive symptoms, as measured by self-reporting of positive symptom experiences and the degree to which the participant believes these experiences (i.e., delusions and hallucinations) are real. The results of this study are promising for the treatment of Cluster A personality disorders, whose diagnostic features are reminiscent of psychotic symptoms and include unjustified suspicion of others (paranoid and schizotypal personality disorders), ideas of reference (schizotypal personality disorder), and magical thinking (schizotypal personality disorder).

It should be noted that the treatment components of ACT and FAP are not mutually exclusive. ACT emphasizes reducing intrapersonal distress and reducing experiential avoidance, while FAP focuses on improving interpersonal behaviors and relationships. These treatments could be combined in order to improve the treatment of personality disorders. For example, Callaghan, Gregg, Marx, Kohlenberg, and Gifford (2004) provide a strong rationale for incorporating FAP and ACT (called “FACT”) to treat both maladaptive interpersonal (via FAP techniques) and intrapersonal (via ACT techniques) behaviors.

Conclusion on Manualized PD Treatments. Overall, there has been a fair number of efficacy studies concerning the manualized treatment of personality disorders, but the numbers pale in comparison to those examining treatments for Axis I disorders. An exception is noted in regard to borderline personality disorder, which is the focus of many recent CBT developments. Avoidant personality disorder, and to a lesser degree, dependent and obsessive-compulsive personality disorders have shown improvement in symptoms, general functioning, and secondary symptoms (i.e., depression) as a result of cognitive-behavioral interventions. Additionally, these gains are typically sustained at follow-up assessments. The efficacy of CBT in the direct treatment of schizotypal, schizoid, paranoid, histrionic, narcissistic, and antisocial personality disorders has remained untested. However, the efficacy of some cognitive-behavioral interventions in the treatment of antisocial personality disorder may be extrapolated

from studies focusing on the treatment of such populations as drug offenders, convicts, and juvenile delinquents. Borderline personality disorder aside, it is promising to note that the amount of scientifically-sound manualized treatment efficacy studies targeting personality disorder symptoms in the last five years is about equal to all of the sound efficacy studies preceding 2003.

Treatment Selection Based on Response Classes

Manualized treatments provide one useful strategy for therapists faced with treating personality disorders. However, we noted above that research has failed to systematically examine the effects on several personality disorder diagnoses. Therapists who help non-borderline and non-avoidant clients in particular are likely to experience a lack of empirical guidance when making treatment decisions. In addition, many personality-disordered clients find overly structured therapy aversive and show resistance to manualized treatment. This can cause concern on the part of clinicians who attempt to treat the very challenging behavioral patterns that personality-disordered clients present. Therefore, we now turn to a discussion of alternative behavioral strategies that may be useful when there is no manualized treatment to guide therapy.

Farmer and Nelson-Gray (2005) noted that: “Response classes or behavioral patterns constitute one behavioral analogy to the concept of personality” (p. 104). When an empirically-grounded or manualized treatment is not readily available, the identification of a target problem behaviors can be extremely useful in developing goals for therapy. Indeed, treatment matched to a specific presenting problem or target behavior is more effective than mismatched treatment (e.g., McKnight, Nelson, Hayes, & Jarrett, 1984; Nelson-Gray, Herbert, Herbert, Sigmon, & Brannon, 1989). It is our view that a focus on relevant response classes, though applicable to all personality disorders, is particularly useful for the Cluster A diagnoses, as these diagnoses have received no attention in the empirically-validated treatment literature. We now review behaviorally-based interventions for the following response classes typical of personality disorders: anxiety, anger/hostility, social skill deficits, problems with assertiveness, and paranoid ideation (see Farmer & Nelson-Gray, 2005, for a full review).

Anxiety. Individuals with Cluster C (avoidant, dependent, and obsessive-compulsive) and borderline personality disorders often report clinically significant levels of anxiety and may wish to target such problems in therapy. Fortunately, a wide variety of treatment approaches is available for clinicians working with these clients. Exposure-based and cognitive-behavioral interventions are those most commonly used to address anxious response classes.

As an example, Zinbarg, Craske, and Barlow (1993) have developed an empirically-based treatment manual that outlines a specific cognitive-behavioral approach to the management of anxiety. Following extensive psychoeducation about the nature and purpose of anxiety, the client works with the therapist to recognize his or her own triggers for anxiety. Relaxation techniques (particularly Jacobsonian muscle relaxation) and cognitive restructuring techniques are then taught. Next, the client is repeatedly exposed to specific worrisome thoughts that have been problematic. Finally, the client learns how to apply the newly-acquired skills to real-life situations likely to be encountered.

Anger/hostility. Problems related to anger management are relatively common to paranoid, antisocial, borderline, and narcissistic personality disorders. Specifically, individuals with these diagnoses tend to react in overtly angry styles when triggered either by internal or external cues. For example, individuals with narcissistic personality disorder often exhibit hostile behavior when confronted with interpersonal rejection or criticism (McCann & Biaggio, 1989). Therefore, behaviorally-based anger management strategies may be useful in therapy with personality-disordered clients for whom anger behavior is identified as a target of treatment.

Deffenbacher and McKay (2000) have developed an empirically-based treatment protocol for anger management modeled on Novaco's (1975) adaptation of stress inoculation training. This intervention involves psychoeducation about the origins and effects of anger management problems followed by a functional analysis of anger behavior. The treatment strategy is a cognitive-behavioral approach, beginning with relaxation training (i.e., relaxation scene construction, deep breathing, and progressive muscle relaxation). Cognitive restructuring skills are then taught to help clients identify maladaptive thinking patterns that trigger and maintain anger experiences. Finally, "coping skills" modules are used to help the client implement these strategies in "anger scenes" that range from low to mild experiences to moderate to worst anger scenes.

Social skill deficits. The Cluster A (paranoid, schizoid, and schizotypal) personality disorders are characterized by detachment from social relationships and sometimes overtly bizarre and eccentric behavior. For this reason, social skills training (SST) is likely to be helpful in instances when clients with such diagnoses identify this behavioral pattern as a treatment target. SST training is an approach based on several principles of social learning theory and operant conditioning. Broadly speaking, it involves teaching more effective and appropriate social and interpersonal behaviors with the goal of improving functioning in those domains (Pratt & Mueser, 2002). Because of the inherent benefits afforded by teaching social behavior in a social setting, it is preferable to conduct SST in group format.

SST programs, whether used for children with behavioral problems or adults with significant deficits in interpersonal functioning, often follow the same general outline with a new skill (e.g., initiating conversations) being taught each therapy session. Four steps comprise the typical progression of each session. First, a new skill is introduced and a rationale for its use is explained. Second, the steps necessary for the use of the skill are outlined (e.g., listed publicly on a board) and explained. A third component of SST involves behavioral practice of the skills in the form of a role-play. Here, therapists first model the use of the skill in an applicable real-life scenario. Members of the group then practice the skill and receive both positive feedback and constructive advice. Finally, homework is assigned to assist in the generalization of the skill to the client's natural environment. In inpatient settings, staff are typically directed to watch for and assist in the reinforcement of positive social behaviors.

Marder, Wirshing, Mintz, and McKenzie (1996) tested the efficacy of this approach on an inpatient unit with individuals diagnosed with schizophrenia and found that SST resulted in greater improvement on measures of social adjustment than supportive group therapy alone. Although schizophrenia is not characterized as a personality disorder, schizoid and schizotypal individuals in particular display clinical features that are on the same spectrum as schizophrenia (e.g., Siever, Bernstein,

& Silverman, 1995). Therefore, for individuals with such diagnoses that identify deficits in interpersonal functioning as a treatment goal, SST may indeed be beneficial. Moreover, the interpersonal effectiveness module of DBT has, in our experience, been useful with such clients.

Assertiveness. Clients who exhibit borderline, histrionic, and dependent personality styles sometimes report problems related to expressing their preferences or needs interpersonally. These individuals might inhibit such behavior in order to maintain desired relationships. In addition, those with dependent personality disorder may display an impairing pattern of relying on others to make most decisions for them. Salter (1949) initially described assertiveness as a personality trait; however, Wolpe (1958) and Lazarus (1966) conceptualized it instead as a behavioral response. Indeed, problems related to a lack of assertiveness may be a target of therapy for some personality-disordered clients.

Davis, Eshelman, and McKay (2000) describe an assertiveness training approach that might be useful for such clients. They first emphasize a discussion regarding the client's current pattern of interpersonal behavior. Observational role-plays can be helpful in this capacity. After identifying their interpersonal style as overly aggressive or overly passive, clients learn to recognize interpersonal scenarios that trigger non-assertive behavior. Next, effective techniques for expressing one's thoughts, feelings, and desires are taught, including the use of listening skills and assertive body language. After practicing (i.e., role-playing) these skills for applicable situations, the client learns strategies for avoiding manipulation by others when using assertiveness skills. To our knowledge, no research examining the utility of assertiveness training in personality-disordered populations has been conducted; however, this approach may be useful for clients who identify deficits in assertiveness skills as a target of therapy.

Paranoid Ideation. Clients with Cluster A diagnoses, especially paranoid personality disorder, are likely to exhibit paranoid ideation that negatively affects interpersonal functioning. Paranoia can be defined as, "a disordered mode of thought that is dominated by an intense, irrational, but persistent mistrust of people, and a corresponding tendency to interpret the actions of others as deliberately demeaning or threatening" (Fenigstein, 1996, p. 242). This behavior proves rather difficult to address in treatment because such patterns of thought are not easily modified, especially when distrust of the therapist is evident.

Farmer and Nelson-Gray (2005) offer suggestions for helping such clients when this response class is identified as a target of therapy. Initially, the development of trust and a strong therapeutic alliance is essential for effective treatment. Once the client's trust is gained, the paranoid individual may benefit from gentle challenges to form alternative hypotheses regarding environmental stimuli. This can encourage flexibility to stimulus cues that are typically responded to in rigid and maladaptive ways. Further, paranoid tendencies are sometimes augmented when the individual does not know all the details of a situation. Therefore, exploring the factual basis for distorted conclusions may be useful. In particular, reinforcing disclosures associated with uncertainty is likely to help the client adopt more flexible thinking patterns. The latter suggestion is consistent with FAP techniques, which could be a beneficial treatment approach in general when treating this response class given that the relationship between the therapist and the client is central.

The Role of Functional Analysis in Treatment

Manualized treatments for personality disorders and their associated response classes are good starting points in therapy for such clients. Functional analysis can be yet another component of successful treatment with this population. Recall that initially, functional analysis involves identifying and hypothesizing which variables control a target behavior. When these controlling variables are altered in treatment, the target behavior should be modified.

For cases in which these variables are subsequently modified in treatment with little effect on the target behavior, additional information about the function of the behavior is then necessary to develop and test additional hypotheses about any environmental conditions that are maintaining a behavior (Kazdin, 2001). That is, in such cases that interventions based on functional analysis do not yield changes in a target behavior, the original functional analysis that informed the intervention strategy is misguided or flawed (Hayes & Follette, 1992). Therefore, functional analysis is not just an assessment method that directly informs treatment, but it is also a component of treatment as it involves the ongoing assessment of behavior to increase the effectiveness of interventions.

We have reviewed relevant methods for conducting a functional analysis. Given the complicated nature of dysfunctional behavioral repertoires among those diagnosed with personality disorders, however, it should be noted that a clinician's initial functional analysis may not be entirely accurate and require revision as a part of ongoing treatment. To revisit an earlier example, self-injury associated with borderline personality disorder may serve several functions, such as positively reinforcing effects (e.g., comfort from a significant other) and negatively reinforcing effects (e.g., avoidance of an argument with a significant other). However, a functional analysis that only identifies positively reinforcing consequences that affect the target behavior and does not include consideration of the negatively reinforcing effects of self-injury during treatment will likely produce insufficient changes in this target behavior. Indeed, this is why functional analysis is an explicit component of borderline personality disorder treatment (Linehan, 1993a). Other domains previously identified in the SORC model, such as discriminative stimuli (e.g., the presence of strangers for a person diagnosed with avoidant personality disorder), would be important to consider as well. Overall, treatments that continuously consider these controlling variables allow clinicians the flexibility to modify treatment to fit the needs of the individual client.

Behavioral Assessment and Treatment:

Examples of Borderline and Avoidant Personality Disorders

Borderline Personality Disorder

Nomothetic Assessment. Borderline personality disorder is included within Cluster B (erratic-emotional-dramatic) of Axis II personality disorders and is characterized by the DSM-IV-TR (APA, 2000) as "a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity that begins by early adulthood and is present in a variety of contexts" (p. 706). Although there can be a large amount of heterogeneity among people diagnosed with borderline personality disorder, there are certain response classes that are predominant among borderline personality

disorder samples (Nelson-Gray et al., 2007). For example, a number of researchers have identified emotional/affective dysregulation (e.g., labile mood, anger, negative affect), interpersonal difficulties (e.g., sensitivity to perceived threats of abandonment or rejections), impulsivity (e.g., self-injury or sexual promiscuity), and cognitive dysregulation (e.g., dissociation in response to stress, unstable self-image) as particular to borderline personality disorder (Linehan, 1993a; Paris, 1999). As we discuss above, the identification of core response classes to each personality disorder is important given the complementary benefits of nomothetic assessment to idiographic assessment.

Among nomothetic assessment techniques that are implicated for borderline personality disorder are devices that establish symptom severity of Axis II disorders in general. This would include procedures outlined previously, such as the SCID-II (First et al., 2004) and self-report measures such as the MCMI-III (Millon, 1983) or PAI (Morey, 1991). Both of the latter self-report measures contain a borderline subscale. Other assessment devices that emphasize topographical response classes typical of borderline personality disorder, such as the Wisconsin Personality Disorders Inventory (Klein, Benjamin, Rosenfeld, Treece, Husted & Greist, 1993) or the MMPI-2 (Butcher et al., 1989), may be beneficial as well. For example, the typical profile of a borderline personality disorder client on the MMPI-2 includes elevated scores on Scale 8 (Schizophrenia), Scale 2 (Depression), Scale 4 (Psychopathic Deviate), and Scale 7 (Psychasthenia); (Bell-Pringle, Pate, & Brown, 1997). Although measures specific to borderline personality disorder, such as the Diagnostic Interview for Borderlines-Revised (Zanarini, Gunderson, Frankenburg, & Chauncey, 1989) or Borderline Personality Questionnaire (Poreh, Rawlings, Claridge, Freeman, Faulkner, & Shelton, 2006) are important, the use of assessment devices that include other disorders is necessary as well on the basis of differential diagnosis. In addition, the assessment of collateral sources in conjunction with such measures may clarify issues related to diagnostic status (e.g., comorbidity with Axis I or Axis II disorder, or overlapping symptoms that may be better accounted for by another disorder).

The utility of this nomothetic approach in general is the identification of core response topographies. Identification of these topographies is important because (a) this form of assessment indicates which behaviors should be targeted in treatment, (b) diagnoses may indicate which treatments that are empirically supported for these covarying response classes captured within a diagnostic label (this is particularly relevant to borderline personality disorder), and (c) diagnostic status may inform idiographic assessment approach (i.e., functional analysis) since common functions may be associated with certain topographies. However, regarding the latter point, response topographies in those with borderline personality disorder may also serve a variety of functions (e.g., self-injury may function to decrease exposure to an aversive stimulus or increase exposure to a positive stimulus), which illustrates the importance of functional analysis as the idiographic component of assessment and as a complimentary counterpart to the nomothetic approach.

Idiographic Assessment. Given the heterogeneity among people diagnosed with borderline personality disorder and the severity of related behaviors (e.g., attempted suicide rates range from approximately 60% to 70%; Gunderson, 2001), behaviorally-based assessment is warranted for this diagnosis (Adams, Jendritzka, & Kim, 2006). Indeed, functional analysis, particularly of parasuicidal behaviors (e.g., wrist cutting), is an explicit component of treatment for borderline personality disorder

(Linehan, 1993a). Here we provide an example of the functional analysis of a parasuicidal behavior that is common among borderline personality disorder samples. This example is based on an example provided by Linehan (1993a); however, to be consistent with our model (Nelson-Gray et al., 2007) and the current paper, we interpret this functional analysis within a SORC framework. Therefore, in this example, the response or clinically relevant behavior would be wrist cutting. Stimulus variables may include antecedent events that are external (e.g., argument with a significant other) or internal (e.g., feeling empty and alone). Consequences that follow this behavior and possibly affect its future occurrence might include relief from guilt or feelings of emptiness that follows a cutting episode (negative reinforcement), the reduction of aversive thoughts about the argument that increase feelings of worthlessness (negative reinforcement), or attainment of an apology and comfort from the significant other (positive reinforcement). Organism variables may identify factors that may be maintaining this persistent pattern of interpersonal discord beyond a single event. For example, historical causes of this response class of parasuicidal behaviors may have emerged from (a) a learning history characterized by reinforcement for and modeling of emotionally dysregulated behavior and (b) a temperamentally-based predisposition to experience negative affect and difficulty modulating highly emotionally distressed states. Based on this functional analysis as an assessment technique, a therapist may (a) refer to organismic variables as a way of validating a client, and (b) refer to stimulus and consequence variables as a way of modifying the target behavior in treatment. For instance, a therapist may encourage a client to substitute a more adaptive behavior that is incompatible with wrist cutting, and that yields more favorable outcomes (i.e., increasing the chances of reinforcement) and less aversive outcomes (i.e., decreasing the chances of punishment, such as payment for a hospital visit). In addition, the therapist and client can identify a certain context that the behavior is likely to occur in (i.e., identifying antecedent conditions), which can serve as a cue for engagement in a more adaptive behavior. Again, this example illustrates the utility of functional analysis as a component of treatment.

Given the high rates of comorbidity among Axis II disorders with other Axis II disorders and Axis I disorders (e.g., see Farmer, 2000, for a review), and the high rates of comorbidity among individuals who meet criteria for borderline personality disorder in particular (e.g., Philipsen, 2006), those who present with a borderline personality disorder diagnosis have multiple domains of functional impairment and distress that necessitate treatment. In addition, functional analytic techniques may yield multiple behaviors to be targeted in treatment. For example, a borderline personality disorder client may present with suicidal ideation, unemployment, and chronic interpersonal instability. In such cases, it is not always easy to delineate these presenting concerns and identify which behaviors should be targeted before others. Thus, following functional analysis techniques that identify the relevant SORC variables (see Nelson-Gray et al., 2007, for a discussion of SORC variables typical of borderline personality disorder), Linehan (1993a) outlines a hierarchical structure of target behavior classes and specific target behaviors within each class for borderline personality disorder treatment. The first stage involves arranging targeted behavior classes from most to least urgent. That is, suicidal behaviors would be the most urgent, followed by behaviors that interfere with therapy, quality-of-life interfering behaviors, and finally behavioral skills that can be increased. The second stage requires completion of the first stage and involves decreasing posttraumatic stress (related to childhood sexual abuse, which is commonly reported in those diagnosed with borderline personality disorder; e.g., McLean & Gallop, 2003). The third and final stage involves

increasing self-respect, which is then followed by the realization of individual goals. As this example illustrates, although a client diagnosed with borderline personality disorder may present with multiple target behaviors, these behaviors can be hierarchically arranged and dealt with in a sequential manner based on informed assessment.

Treatment. As discussed earlier, DBT (Linehan, 1993a; see Robins, Schmidt, & Linehan, 2004, for an overview) in particular has received consistent empirical support for borderline personality disorder samples and is the treatment of choice for such clients. DBT is comprehensive in that it involves weekly individual therapy, weekly skills training in a group therapy format, and telephone consultation on an “as-needed” basis. In addition, consultation teams are also incorporated to assist therapists.

A central guiding principle in DBT is dialectics, which is the process of synthesizing disparate elements, events, and ideas into integrated and balanced wholes. This process is facilitated by validation, acceptance, and behavior change. For example, clients are taught to find a balance between acceptance of their current situations and how they see themselves, while also engaging in behavior change to improve their everyday functioning. This component of DBT was developed with the aim to decrease parasuicidal behavior characteristic of borderline personality disordered clients and to increase daily functioning. Validation strategies are also integral to DBT. These strategies help to encourage collaborative client-therapist interactions and balance out behavior change strategies. Linehan (1993a) describes six levels of validation: listening and observing (i.e., maintaining attentive), accurate reflection (i.e., succinctly summarizing a client’s expressions in session), articulating the un verbalized (i.e., verbalizing to the client what may be felt, but has not been stated, and therefore demonstrating that the therapist is actively concerned with the client’s emotions), validating past events (i.e., assisting clients in understanding the consequence of past events or biological predisposition), validating current events (i.e., normalizing a behavior in the current context), and radical genuineness (i.e., interacting with the client as capable and not fragile).

Additionally, consistent with our earlier discussion regarding functional analysis, Linehan’s (1993a) DBT approach includes chain analysis with clients as a component of treatment. The primary goal of chain analysis is to determine the function of a behavior, such as the example above in which wrist cutting is targeted. Based on this analysis, solutions are collaboratively created with the client following this problem solving approach. In addition, more adaptive behaviors are rehearsed.

In addition to engagement in individual therapy, DBT also includes a group-based psychoeducational skills training component that occurs concurrently. Specific skill sets (listed earlier) are targeted in the group component of DBT to improve difficulties that are thought to result from emotional dysregulation (Linehan, 1993b). These skills that are introduced in the group format can then be related to specific therapy goals in the individual setting. (See Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006, for an overview of proposed mechanisms of change in DBT for borderline personality disorder.)

Although DBT is an empirically supported treatment of borderline personality disorder relative to the other DSM-IV-TR personality disorders, other “third wave” behavioral therapies (Hayes et al., 2004) such as ACT (Hayes et al., 1999) and FAP (Kohlenberg & Tsai, 1991) are also implicated in the treatment

of borderline personality disorder individuals. For instance, Hayes, Wilson, Gifford, Follette, and Strosahl (1996) identify emotional distress and a lack of skills to moderate such emotional arousal as defining features of borderline personality disorder. These borderline personality disorder features more broadly fall under the experiential avoidance functional diagnostic dimension (Hayes et al., 1996). This experiential avoidance is conceptualized as the unhealthy attempts to escape from or avoid private events (e.g., emotions, thoughts, and memories). Although Hayes et al. (1996) explicitly implicate DBT strategies as consistent with targeting the experiential avoidance functional diagnostic dimension, this does not necessarily rule out incorporating elements of ACT or FAP. In addition, ACT is a therapy that particularly targets the experiential avoidance functional diagnostic dimension. Perhaps elements of these therapies can be incorporated to enhance the treatment of borderline personality disorder samples. In addition, the FACT approach (described previously) could target emotion dysregulation skills and experiential avoidance behaviors (i.e., intrapersonal functioning), while poor interpersonal functioning could be targeted as well. As another example more specific to borderline personality disorder treatment, Linehan (1993a) addresses collaboration with borderline personality disorder clients as essential to treatment and that FAP techniques provide an approach to effectively respond to non-collaborative behaviors of a client in therapy. Thus, DBT that is complimented by FAP techniques may be beneficial as well.

Earlier, we reported on the clinical utility of the cognitive therapy approach advocated by Beck, Freeman, and Davis (2004) to treat personality disorders (also see Davidson, 2007). Consistent with a basic premise of a cognitive therapy approach that dysfunctional thoughts are associated with different disorders, borderline personality disorder individuals do demonstrate dysfunctional cognitions distinct from other personality disorders (Nelson-Gray, Huprich, Kissling, & Ketchum, 2004). Examples of core beliefs that could be observed in a client with borderline personality disorder include: “The world is a dangerous place;” “I am powerless and vulnerable;” and “I am inherently unacceptable.” These core beliefs, along with the intermediate and automatic thoughts that trigger them, would need to be identified and restructured.

Special challenges concerning BPD clients. Although borderline personality disorder is unique among the other DSM-IV-TR personality disorders given the effectiveness of DBT, borderline clients are well-known for presenting with multiple challenges in a therapeutic setting. Examples might range from mild forms of treatment interfering behaviors (e.g., insistence to talk about recent stressors in therapy) to more extreme versions (e.g., suicidal gestures and threats).

The group-based component of DBT may be effective in addressing mild forms of treatment interfering behaviors by classifying these behaviors as interpersonally interfering in the immediate context of the group and also capable of being modified in the immediate context of the group. A borderline client, for example, may learn more adaptive interpersonal skills in the group that still allow her the opportunity to express herself (e.g., stating at the outset of the group that she would like time to discuss a concern she would like to share and receive group input, as opposed to coming to group refusing to interact or threatening to leave the group). A focus can then be placed on generalizing these behaviors from inside the group to outside of the group. In addition, FAP techniques may facilitate this generalization. For instance, a mild treatment interfering behavior in the group may be considered a

clinically relevant behavior (i.e., a “CRB 1” in FAP terms) that is modifiable contingent on group responsiveness to this behavior. A group therapist may then help this client to identify conditions in the group that lead to a decrease in this clinically relevant behavior and the increase in more adaptive behaviors, and then finally, address how this adaptive behavior that occurred in the group can be generalized outside of the group.

Also, as we mention above, effective collaboration with a client in the individual therapy setting via FAP techniques may decrease the likelihood of challenges with which a client may otherwise present. Within a FAP perspective, these behaviors are likely behaviors that occur outside of session. A therapist could consider how his or her responsiveness to the client is affecting this interaction in therapy and apply behavioral principles occurring at the interpersonal level to shape more collaborative in-session behaviors. Also, applying the Premack principle (Premack, 1965) may be helpful as well to address mild forms of treatment interfering behaviors. In accordance, towards the end of a session, a therapist may allow a client to engage in a response (e.g., discussing a recent stressor) as a reinforcer for initially withholding this behavior to allow for the introduction of new DBT materials in the first part of the session.

In terms of the more extreme treatment interfering behaviors (e.g., suicidal behavior), Linehan (1993a) outlines a hierarchical structure to conceptualize how to target different behaviors (see above). We concur that addressing these more basic needs via DBT behavior change and acceptance techniques is critical prior to addressing other concerns in therapy. Also recall that chain analysis is helpful in identifying how treatment interfering behavior can be decreased within a collaborative framework between a therapist and client.

Avoidant Personality Disorder

Nomothetic assessment. Avoidant personality disorder is included within Cluster C (fearful-anxious) of the Axis II personality disorders and is characterized by the DSM-IV-TR (APA, 2000) as “a pervasive pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation, beginning by early adulthood and present in a variety of contexts” (p. 721). Because of the large amount of symptom overlap and the frequent co-occurrence of social phobia and avoidant personality disorder (Ralevski et al., 2005; Tillfors et al., 2004), several authors (e.g., Reich, 2001) have taken the position that avoidant personality disorder cannot be meaningfully separated from social phobia. We have also taken this position previously (Nelson-Gray et al., 2007) as the functional response class of avoidant behavior appears to be the same in both cases.

Individuals with avoidant personality disorder are likely to present with other Axis I anxiety disorders, other personality disorders (especially dependent personality disorder), and mood disorders (APA, 2000; Oldham et al., 1995). For these reasons, when a diagnosis of avoidant personality disorder is suspected, we recommend the use of SCID-I and SCID-II interviews to determine if the client meets criteria for other diagnoses as well. We also recommend the use of assessment devices that can establish symptom severity. For example, the MCMI-III can be used to determine symptom severity on Axis II, whereas quick screening devices like the Social Phobia Scale (SPS; Mattick & Clarke, 1998), Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998), Beck Anxiety Inventory (BAI; Beck & Steer,

1990), and Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996) can be used to assess anxiety and depression severity. These types of screening devices are also useful because they can be re-administered to the client quickly and efficiently throughout treatment and can provide a means of plotting the client's progress over time.

Idiographic assessment. The primary adaptive problem in avoidant personality disorder is that clients' anxious and avoidant behaviors have begun to interfere with their lives to such a degree that they are experiencing significant distress or impairment as a result. Antecedent events typically include social and performance situations in which the possibility of negative evaluation is present; however, as a result of discriminative learning, some individuals with avoidant personality disorder may still be able to interact with a small number of people (e.g., close family, long-term friends) without fear and anxiety because they have learned over time that associating with these people will not lead to punishing consequences (rejection, humiliation, etc). A typical response chain involves fearful and anxious responses to social situations, which are followed by active avoidance (e.g., leaving a social situation), passive avoidance (e.g., avoiding a social situation), and experiential avoidance (e.g., trying to distract oneself during a social situation). These avoidant behaviors are, in turn, negatively reinforced via an immediate reduction in anxiety, which serves to strengthen and maintain the avoidant behaviors (Nelson-Gray et al., 2007). Thus, from a functional analytic perspective, the key to successful treatment for this condition should be prolonged exposure to previously avoided situations, as this should eventually lead to habituation of clients' fearful and anxious responses, which should, in turn, lead to decreased avoidance.

Treatment. As mentioned above, there are currently no empirically-validated or manualized treatments for a avoidant personality disorder; however, the available evidence suggests that CBT is an effective treatment for this disorder and should be considered a first-line treatment. CBT for avoidant personality disorder should begin by providing the client with psychoeducation, introducing them to the cognitive-behavioral model, and explaining the rationale for using cognitive-behavioral treatment with the client. After these tasks have been accomplished and the client is comfortable with the treatment approach, the therapist should begin to implement standard cognitive-restructuring techniques, including identifying and challenging cognitive distortions, Socratic questioning, problem-solving, and analyzing the pros and cons of avoidance. Clients should also be given homework assignments early on (i.e., in the second or third sessions) in which they are asked to identify and dispute automatic thoughts and to begin developing more adaptive responses. The therapist and client should also work to develop a fear and anxiety hierarchy in the initial sessions by having clients write down problematic situations and ranking them using the Subjective Units of Distress Scale (SUDS).

Once the client has become effective at using their newly-learned cognitive-restructuring techniques and a fear and anxiety hierarchy has been created, the therapist should begin to implement graduated in-session exposure assignments. Given the social nature of the fears most often seen in avoidant personality disorder, group therapy (e.g., Heimberg et al., 1990) appears to be particularly well-suited for the treatment of this condition as it offers many opportunities for in-session exposure exercises. Regardless of how the exposure session is structured, the exposure session should continue until the client's anxiety has significantly decreased for a sustained period of time. For this reason, we have previously recommended that exposure sessions be scheduled for 90 minutes or longer (Farmer &

Nelson-Gray, 2005). In addition, the therapist should monitor the client's anxiety levels throughout the exposure session by having the client report SUDS ratings at 2 – 3 minute intervals. This procedure enables the therapist to assess the effectiveness of the exposure session as it occurs. Exposure sessions also provide opportunities to observe the client's social skills. If warranted, social skills training may be a useful adjunct to CBT for avoidant personality disorder, as there is some evidence that adjunct social skills training may augment the effectiveness of CBT for social phobia (Herbert et al., 2005). As the client becomes more comfortable with the treatment program and comes to understand the process of exposure, the therapist should begin to work with the client to develop exposure-based homework assignments. These types of homework assignments should continue until the end of treatment and beyond. Near the end of treatment, the therapist should review the progress that the client has made as well as the skills that the client has learned. The therapist and client should also work together to identify situations that remain problematic for the client and to set goals for the client to continue working toward after treatment has been discontinued.

It should be noted that more behaviorally-oriented therapists may prefer an “exposure therapy only” type of approach to the treatment of avoidant personality disorder that does not include a cognitive-restructuring component. Given our theoretical position, the substantial overlap observed between avoidant personality disorder and social phobia (Tillfors et al., 2004; Reich, 2001), and the effectiveness of exposure therapy in the treatment of social phobia and other anxiety disorders (e.g., Feske & Chambless, 1995; Foa et al., 1991; Keane et al., 1989; Trull et al., 1988), we believe that it is reasonable to infer that exposure therapy would also be an optimal way of treating avoidant personality disorder. Additional support for the use of exposure therapy alone in the treatment of avoidant personality disorder comes from studies that have examined the relative effectiveness of exposure therapy and cognitive-restructuring in the treatment of social phobia. For example, a meta-analysis conducted by Gould, Buckminster, Pollack, Otto, and Yap (1997) found that while cognitive restructuring alone reduced social anxiety symptoms and cognitive errors, exposure therapy (alone or coupled with cognitive-restructuring) produced larger effect sizes. Other studies have reported that exposure therapy alone is capable of producing cognitive changes comparable to those of cognitive-restructuring alone (e.g., Mattick, Peters, & Clark, 1989), and that exposure therapy alone is at least as effective as exposure therapy plus cognitive-restructuring in the treatment of social phobia (Hope, Heimberg, & Bruch, 1995). Taken together, these studies suggest that exposure therapy alone should also be considered as a first-line treatment for avoidant personality disorder.

Special challenges concerning AVPD clients. Although the treatment outcome literature suggests that CBT and exposure therapy are likely to be effective treatments for avoidant personality disorder, it is still clear that, like all personality-disordered clients, individuals with avoidant personality disorder will present special challenges to therapists. For example, given the evidence that avoidant personality disorder may be an extreme variant of generalized social phobia (e.g., Tillfors et al., 2004; Reich, 2001), it is likely that clients with this condition will be challenging cases for therapists to treat simply because of the high level of severity and impairment associated with the disorder. Further, as Sperry (2006) has noted, avoidant personality disorder clients often initially present to therapists as guarded, disengaged, and suspicious because of their extreme fears of negative evaluation and hypersensitivity to criticism. Indeed, such clients may “test” new therapists to see if they are safe and trustworthy “by changing

appointment dates and times, cancelling at the last minute, coming late for sessions, or failing to do homework” (Sperry, 2006, p. 80). We agree with Sperry’s (2006) recommendation to anticipate these types of behaviors early on and to take an empathic and accepting stance toward these behaviors to avoid early termination on the part of the client. An additional issue concerns dependency issues. After therapists have established good rapport with avoidant personality disorder clients, there is often a tendency to become overly dependent upon the therapist that is likely to complicate termination. Therapists should work with clients throughout the therapeutic process to help them to become more independent and self-reliant, such as via FAP techniques (e.g., reinforcing independent gestures with the therapist). In addition, therapists should anticipate the possibility of termination problems and begin speaking with clients early on about this process.

Clinical Implications

Although they have been historically referred to as “characterological” in nature, personality disorders can be readily conceptualized as longstanding patterns of covarying response classes that are maladaptive in a variety of functional domains. Despite the fact that the concept of “personality” has, in the past, been eschewed by behaviorists, it is our view that the assessment and treatment of personality disorders can be advanced by the use of basic behavioral principles and techniques. The goal of this paper was to provide specific recommendations for using such principles to improve clinical practice with clients who exhibit personality disorder symptoms. Given the extensive review provided by this paper, we now provide a brief summary of our recommendations as they apply to both assessment and treatment with this population.

Clinical Implications for Assessment of Personality Disorders

We have argued that traditional diagnostic viewpoints, despite their limitations, are useful. However, behavioral assessment approaches can indeed complement and expand upon a diagnostic framework within the context of personality disorder assessment. It is our recommendation that the clinician begins assessment with an unstructured interview to build rapport and elicit information about the behavioral patterns that have resulted in functional impairment and/or distress. Structured clinical interviews and relevant, psychometrically-sound questionnaires can then help to confirm or rule out a diagnosis of personality disorder. It is our view that, in conjunction with diagnostic assessment, behavioral assessment techniques can provide clarity and guidance with regard to selecting target behaviors and setting treatment goals. We recommend, in particular, the use of a functional analysis interpreted through a SORC framework, within which controlling variables for target behaviors can first be identified and then modified in the course of treatment. More specifically, techniques such as self-monitoring, role-playing, and direct observation should be considered in order to fully understand the antecedents and consequences of the problem behaviors that have been identified by the client or other relevant individuals (e.g., a spouse). As a caution, the clinician should attend to the fact that the longstanding and complex nature of personality-disordered behavior will likely require that the functional analysis is both extremely thorough and revisited continually. This is especially true if it appears that there are multiple environmental contexts or stimuli that elicit and maintain the problematic target behavior. Another advantage of behavioral assessment is the availability of techniques (e.g., self-

monitoring, role-playing, and direct observation) used for collecting data and monitoring the progress of the client in altering various target behaviors. When there is no or little observed improvement in the target behavior of interest, the functional analysis can be re-examined and modified as needed.

Clinical Implications for Treatment of Personality Disorders

Some clients with identified personality disorder diagnoses (e.g., BPD) can benefit from a manualized treatment (e.g., DBT) that is guided by behavioral principles. We recommend the use of such a treatment if it is available. However, in many cases, a manualized treatment is not available or not preferred. In this case, we recommend implementation of a broad-based CBT approach (including “third-wave therapies”) and basic behavioral principles, both of which can provide guidance to the clinician working with a client who has been diagnosed with a personality disorder. We have suggested that a behavioral perspective views a “personality disorder” as a maladaptive set of covarying response classes. Therefore, behaviorally-based interventions that target the relevant response classes are likely to be useful. Specific examples include treatments for behaviors that are centered around (for example): anxiety, anger/hostility, assertiveness, and paranoia. Identification and treatment of such response classes is likely to improve the client’s overall functioning even when no packaged treatment exists. It is our view that this emphasis on problematic response classes is particularly applicable to Cluster A diagnoses, for which there are virtually no specific treatment packages.

Conclusion

The fields of behavioral assessment and behavior therapy have long been regarded as useful for treating a wide variety of clinical problems. The fact that numerous “empirically-validated treatments” are based upon behavioral principles is a testament to this conclusion. In this paper, we have presented our view that there exist a variety of behaviorally-oriented techniques that can improve clinical practice with regard to personality disorders. In particular, the identification of problematic response classes and use of functional analysis are likely to expand upon a diagnostic framework and suggest treatments that can be tailored to the specific patterns of behavior exhibited by a client. Personality disorders are indeed complex and difficult to treat; however, the application of basic behavioral principles to both assessment and treatment is likely to maximize success with this challenging population.

References

- Adams, H. E., & Haber, J. D. (1984). The classification of abnormal behavior: An overview. In H.E. Adams & P.B. Sutker (Eds.), *Comprehensive handbook of psychopathology* (pp. 3-25). New York, NY: Plenum.
- Adams, W. L., Jendritzka, T., & Kim, S. A. (2006). Borderline personality disorder. In M. Hersen (Ed.), *Clinician’s handbook of adult behavioral assessment* (pp. 431-457). San Diego, CA: Elsevier Academic.

- Alden, L. E., & Capreol, M. J. (1993). Avoidant personality disorder: Interpersonal problems as predictors of treatment response. *Behavior Therapy*, 24, 357-376.
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Arntz, A., van Beijsterveldt, B., Hoekstra, R., Hofman, A., Eussen, M., & Sallaerts, S. (1992). The interrater reliability of a Dutch version of the Structured Clinical Interview for DSM-III-R personality disorders. *Acta Psychiatrica Scandinavia*, 85(5), 394-400.
- Bach, P., & Hayes, S. C. (2002). The use of acceptance and commitment therapy to prevent the rehospitalization of psychotic patients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 70(5), 1129-1139.
- Beck, A. T., Freeman, A., & Davis, D. D. (2004). *Cognitive therapy of personality disorders* (2nd ed.). New York, NY: Guilford.
- Beck, A.T., Rush, A.J., Shaw, B.F., & Emery, G. (1979). *Cognitive therapy of depression*. New York, NY: Guilford Press.
- Beck, A. T., & Steer, R. A. (1990). *Beck Anxiety Inventory Manual*. New York, NY: Psychological Corporation.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for Beck Depression Inventory—II (BDI-II)*. San Antonio, TX: Psychology Corporation.
- Bell-Pringle, V. J., Pate, J. L., & Brown, R. C. (1997). Assessment of borderline personality disorder using the MMPI-2 and the Personality Assessment Inventory. *Assessment*, 4, 131-139.
- Blackburn, R., Donnelly, J. P., Logan, C., & Renwick, S. J. D. (2004). Convergent and discriminative validity of interview and questionnaire measures of personality disorder in mentally disordered offenders: A multitrait-multimethod analysis using confirmatory factor analysis. *Journal of Personality Disorders*, 18, 129-150.
- Blashfield, R. K., & Intoccia, V. (2000). Growth of the literature on the topic of personality disorders. *American Journal of Psychiatry*, 157, 472-473.
- Boyle, G. J., Ward, J. & Lennon, T. J. (1994). Personality assessment inventory: A confirmatory factor analysis. *Perceptual and Motor Skills*, 79, 1441-1442.
- Butcher, J. N., Dahlstrom, W. G., Graham, J. R., Tellegen, A., & Kaemmer, B. (1989). *MMPI-2: Minnesota Multiphasic Personality Inventory-2: Manual for administration and scoring*. Minneapolis: University of Minnesota Press.

- Callaghan, G. M., Gregg, J. A., Marx, B. P., Kohlenberg, B. S., & Gifford, E. (2004). FACT: The utility of an integration of functional analytic psychotherapy and acceptance and commitment therapy to alleviate human suffering. *Psychotherapy: Theory, Research, Practice, Training*, 41, 195-207.
- Callaghan, G. M., Summers, C. J., & Weidman, M. (2003). The treatment of histrionic and narcissistic personality disorder behaviors: A single-subject demonstration of clinical improvement using Functional Analytic Psychotherapy. *Journal of Contemporary Psychotherapy*, 5, 321-339.
- Chambless, D.L., & Ollendick, T.H. (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology*, 52, 685-716.
- Chambless, D. L., Sanderson, W. C., Shoham, V., Bennett Johnson, S., Pope, K. S., Crits-Cristoph, P., et al. (1996). An update on empirically validated therapies. *The Clinical Psychologist*, 49, 5-18.
- Chambless, D. L., Baker, M. J., Baucom, D. H., Beutler, L. E., Calhoun, K. S., Crits-Christoph, P., et al. (1998). Update on empirically validated treatments II. *The Clinical Psychologist*, 51, 3-18.
- Claridge, G. S., & Broks, P. (1984). Schizotypy and hemisphere function. I. Theoretical considerations and measurements of schizotypy. *Personality and Individual Differences*, 5, 633-648.
- Cone, J. D. (2001). *Evaluating outcomes: Empirical tools for effective practice*. Washington, D.C.: American Psychological Association.
- Conte, H., Plutchik, R., Karasu, T., & Jerrett, I. (1980). A self-report borderline scale: Discriminant validity and preliminary norms. *Journal of Nervous and Mental Disease*, 168, 428-435.
- Craig, R.J. (1999). Overview and current status of the Millon Clinical Multiaxial Inventory. *Journal of Personality*, 72, 390-406.
- Davidson, K. M. (2007). *Cognitive therapy for personality disorders: A guide for clinicians* (2nd ed.). New York, NY: Routledge.
- Davidson, K., Norrie, J., Tyrer, P., Gumley, A., Tata, P., Murray, H., et al. (2006). The effectiveness of cognitive behavior therapy for borderline personality disorder: Results from the borderline personality disorder study of cognitive therapy (BOSCOT) trial. *Journal of Personality Disorders*, 20, 450-465.
- Davis, M., Eshelman, E. R., & McKay, M. (2000). *The relaxation and stress reduction workbook* (5th ed.). Oakland, CA: New Harbinger Publications, Inc.
- Davison, G. C., & Stuart, R. (1975). Behavior therapy and civil liberties. *American Psychologist*, 30, 755-763.
- Deffenbacher, J.L., & McKay, M. (2000). *Overcoming situational and general anger: A protocol for the treatment of anger based on relaxation, cognitive restructuring, and coping skills training*. Oakland, CA: New Harbinger Publications, Inc.

- Eysenck, H.J. (Ed.) (1976). *Case studies in behaviour therapy*. London, England: Routledge & Kegan Paul.
- Farmer, R. F. (2000). Issues in the assessment and conceptualization of personality disorders. *Clinical Psychology Review*, 20, 823-851.
- Farmer, R. F., & Nelson-Gray, R. O. (2005). *Personality-guided behavior therapy*. Washington, D.C.: American Psychological Association.
- Fenigstein, A. (1996). Paranoia. In C. G. Costello (Ed.), *Personality characteristics of the personality disordered* (pp. 242 – 275). New York, NY: Wiley.
- Ferster, C. (1965). Classification of behavioral pathology. In L. Krasner & L. P. Ullman (Eds.), *Research in Behavior Modification* (pp. 6-26). New York, NY: Holt, Rinehart, & Winston.
- Feske, U., & Chambless, D. L. (1995). Cognitive-behavioral therapy versus exposure only treatment for social phobia: A meta-analysis. *Behavior Therapy*, 26, 695 – 720.
- First, M. B., & Gibbon, M. (2004). The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and the Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II). In Hilsenroth, M. J., and Segal, D. L. (Eds.) *Comprehensive Handbook of Psychological Assessment, Vol. 2: Personality Assessment*. Hoboken, NJ: John Wiley & Sons.
- Foa, E. B., Rothbaum, B. O., Riggs, D. S., & Murdock, T. B. (1991). Treatment of post-traumatic stress disorder in rape victims: A comparison between cognitive-behavioral procedures and counseling. *Journal of Consulting and Clinical Psychology*, 59, 715 – 723.
- Follette, W. C., Naugle, A. E., & Linnerooth, P. J. N. (2000). *Functional alternatives to traditional assessment and diagnosis*. In M. J. Dougher (Ed.), *Clinical behavior analysis* (pp. 99-125). Reno, NV: Context Press.
- Goldfried, M. R., & Pomeranz, D. M. (1968). Role of assessment in behavior modification. *Psychological Reports*, 23, 75-87.
- Goldfried, M. R., & Sprafkin, J. N. (1976). Behavioral personality assessment. In J. T. Spence, R. C. Carson, & J. W. Thibaut (Eds.), *Behavioral approaches to therapy* (pp. 295 – 321). Morristown, NJ: General Learning Press.
- Gould, R. A., Buckminster, S., Pollack, M. H., Otto, M. W., & Yap, L. (1997). Cognitive-behavioral and pharmacological treatment for social phobia: A meta-analysis. *Clinical Psychology: Science and Practice*, 4, 291 – 306.
- Gunderson, J. G. (2001). *Borderline personality disorder: A clinical guide*. Washington, DC: American Psychiatric Press.

- Hawkins, R. P. (1986). Selection of target behaviors. In R. O. Nelson & S. C. Hayes (Eds.), *Conceptual Foundations of Behavioral Assessment* (pp. 331-385). New York, NY: Guilford.
- Hayes, S. C., Barlow, D. H., & Nelson-Gray, R. O. (1999). *The scientist-practitioner: Research and accountability in the age of managed care*. Needham Heights, MA: Allyn & Bacon.
- Hayes, S. C., & Follette, W. C. (1992). Can functional analysis provide a substitute for syndromal classification? *Behavioral Assessment*, 14, 345-365.
- Hayes, S. C., Follette, V. M., & Linehan, M. M. (Eds.) (2004). *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition*. New York: Guilford.
- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes, and outcomes. *Behaviour Research and Therapy*, 44, 1 – 25.
- Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York, NY: Guilford.
- Hayes, S.C., Wilson, K.G., Gifford, E.V., Follette, V.M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, 64, 1152-1168.
- Haynes, S. N., Nelson, K. G., Thacher, I., & Kaholokula, J. K. (2002). Outpatient behavioral assessment and treatment target selection. In M. Hersen & L. K. Porzelius (Eds.), *Diagnosis, conceptualization, and treatment planning for adults: A step-by-step guide* (pp. 35-70). Mahwah, NJ: Lawrence Erlbaum.
- Heimberg, R. G., Dodge, C. S., Hope, D. A., Kennedy, C. R., Zollo, L. J., & Becker, R. E. (1990). Cognitive behavioral group treatment for social phobia: Comparison with credible placebo control. *Cognitive Therapy and Research*, 14, 1 – 23.
- Herbert, J. D., Gaudiano, B. A., Rheingold, A. A., Myers, V. H., Dalrymple, K., & Nolan, B. M. (2005). Social skills training augments the effectiveness of cognitive-behavioral group therapy for social anxiety disorder. *Behavior Therapy*, 36, 125 – 138.
- Hope, D. A., Heimberg, R. G., & Bruch, M. A. (1995). Dismantling cognitive-behavioral therapy group therapy for social phobia. *Behaviour Research and Therapy*, 33, 637 – 650.
- Jacobo, M. C., Blais, M. A., Baity, M. R., & Harley, R. (2007). Concurrent validity of the Personality Assessment Inventory borderline scales in patients seeking dialectical behavior therapy. *Journal of Personality Assessment*, 88, 74-80.
- Kazdin, A. E. (2001). *Behavior modification in applied settings* (6th ed.). Belmont, CA: Wadsworth.
- Keane, T. M., Fairbank, J. A., Caddell, J. M., & Zimering, R. T. (1989). *Implosive (flooding) therapy reduces symptoms of PTSD in Vietnam combat veterans*. *Behavior Therapy*, 20, 245 – 260.

- Klein, M.H., Benjamin, L.S., Rosenfeld, R., & Treece, C. (1993). The Wisconsin personality disorders inventory: Development, reliability, and validity. *Journal of Personality Disorders*, 7, 285-303.
- Kohlenberg, R. J., & Tsai, M. (1991). *Functional analytic psychotherapy: Creating intense and curative therapeutic relationships*. New York, NY: Plenum.
- Koons, C., Robins, C. J., Tweed, J. L., Lynch, T. R., Gonzelez, A. M., Morse, J. Q., et al. (2001). Efficacy of dialectical behavior therapy in women veterans with borderline personality disorder. *Behavior Therapy*, 32, 371-390.
- Kurtz, J. E., Morey, L. C., & Tomarken, A. J. (1993). The concurrent validity of three self-report measures of borderline personality. *Journal of Psychopathology and Behavioral Assessment*, 15, 255-266.
- Lang, P. J. (1968). Fear reduction and fear behavior: Problems in treating a construct. In J.M. Schlien (Ed.), *Research in psychotherapy* (Vol. 3, pp. 90-102). Washington, DC: American Psychological Association.
- Lazarus, A. (1966). Behavioral rehearsal vs. nondirective therapy vs. advice in effecting behavior change. *Behavioral Research and Therapy*, 4, 209-212.
- Lenzenweger, M. F. (2006). The longitudinal study of personality disorders: History, design, considerations, and initial findings. *Journal of Personality Disorders*, 20, 645-670.
- Linehan, M. M. (1993a). *Cognitive-behavioral treatment of borderline personality disorder*. New York, NY: Guilford.
- Linehan, M. M. (1993b). *Skills training manual for treating borderline personality disorder*. New York, NY: Guilford.
- Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. L. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of General Psychiatry*, 48, 1060-1064.
- Linehan, M. M., Comtois, K. A., Murray, A. M., Brown, M. Z., Gallop, R. J., Heard, H. L., et al. (2006). Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry*, 63, 757-766.
- Linehan, M. M., Dimeff, L., Reynolds, S., Comtis, K., Shaw-Welch, S., Heagerty, P., et al. (2002). Dialectical behavior therapy versus comprehensive validation plus 12 step for the treatment of opioid dependent women meeting criteria for borderline personality disorder. *Drug and Alcohol Dependence*, 67, 13-26.

- Linehan, M. M., Schmidt, H., Dimeff, L., Craft, C., Kanter, J., & Comtis, K. (1999). Dialectical behavior therapy for patients with borderline personality disorder and drug-dependence. *The American Journal of Addictions*, 8, 279-292.
- Linehan, M. M., Tutek, D. A., Heard, H. L., & Armstrong, H. E. (1994). Interpersonal outcome of cognitive-behavioral treatment for chronically suicidal borderline patients. *American Journal of Psychiatry*, 151, 1771-1776.
- Low, G., Jones, D., Duggan, C., Power, M., & MacLeod, A. (2001). The treatment of deliberate self-harm in borderline personality disorder using dialectical behaviour therapy: A pilot study in a high security hospital. *Behavioural and Cognitive Psychotherapy*, 29, 85-92.
- Lynch, T. R., Chapman, A. L., Rosenthal, M. Z., Kuo, J. R., & Linehan, M. M. (2006). Mechanisms of change in dialectical behavior therapy: Theoretical and empirical observations. *Journal of Clinical Psychology*, 62, 459-480.
- Maffei, C., Fossati, A., Agostoni, I., Barraco, A., Bagnato, M., Deborah, D., et al. (1997). Interrater reliability and internal consistency of the Structured Clinical Interview for DSM-IV Axis II personality disorders (SCID-II), version 2.0. *Journal of Personality Disorders*, 11, 279-284.
- Marder, S. R., Wirshing, W. C., Mintz, J., McKenzie, J. (1996). Two-year outcome of social skills training and group psychotherapy for outpatients with schizophrenia. *American Journal of Psychiatry*, 153, 1585-1592.
- Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy*, 36, 455 – 470.
- Mattick, R., Peters, L., & Clarke, J. (1989). Exposure and cognitive-restructuring for social phobia: A controlled study. *Behavior Therapy*, 27, 279 – 293.
- McCann, J. T., & Biaggio, M. K. (1989). Narcissistic personality features and self-reported anger. *Psychological Reports*, 64, 55-58.
- McKnight, D. L., Nelson, R. O., Hayes, S. C., & Jarrett, R. B. (1984). Importance of treating individually-assessed response classes in an amelioration of depression. *Behavior Therapy*, 15, 315-335.
- McLean, L. M., & Gallop, R. (2003). Implications of childhood sexual abuse for adult borderline personality disorder and complex posttraumatic stress disorder. *American Journal of Psychiatry*, 160, 369-371.
- Miller, A. L., Rathus, J. H., & Linehan, M. M. (2007). *Dialectical behavior therapy with suicidal adolescents*. New York, NY: Guilford Press.
- Miller, L. S., Bergstrom, D. A., Cross, H. J., & Grube, J. W. (1981). Opinions and use of the DSM system by practicing psychologists. *Professional Psychology*, 12, 385-390.

- Millon, T. (1983). *Millon Clinical Multiaxial Inventory manual* (3rd ed.). Minneapolis, MN: National Computer Systems.
- Morey, L. C. (1991). *The Personality Assessment Inventory professional manual*. Odessa, FL: Psychological Assessment Resources.
- Muran, J. C., Safran, J. D., Samstag, L. W., & Winston, A. (2005). Evaluating an alliance-focused treatment for personality disorders. *Psychotherapy: Theory, Research, and Training*, 42(4), 532-545.
- Nelson, R. O. (1981). Realistic dependent measures for clinical use. *Journal of Consulting and Clinical Psychology*, 49, 168-182.
- Nelson, R. O. (1988). *Relationship between assessment and treatment within a behavioral perspective*. *Journal of Psychopathology and Behavioral Assessment*, 10, 155-170.
- Nelson, R. O., & Barlow, D. H. (1981). Behavioral assessment: Basic strategies and initial procedures. In D. H. Barlow (Ed.), *Behavioral assessment of adult disorders* (pp. 13-43). New York, NY: Guilford.
- Nelson, R. O., & Hayes, S. C. (1979). Some current dimensions of behavioral assessment. *Behavioral Assessment*, 1, 1-16.
- Nelson, R. O., & Hayes, S. C. (1986). The nature of behavioral assessment. In R. O. Nelson & S. C. Hayes (Eds.), *Conceptual foundations of behavioral assessment*. (pp. 3 - 41). New York, NY: Guilford.
- Nelson-Gray, R. O., & Farmer, R. F. (1999). Behavioral assessment of personality disorders. *Behaviour Research and Therapy*, 37, 347-368.
- Nelson-Gray, R. O., Herbert, J. D., Herbert, D. L., Sigmon, S. T., & Brannon, S. E. (1989). *Effectiveness of matched, mismatched, and package treatments of depression*. *Journal of Behavior Therapy and Experimental Psychiatry*, 20, 281-294.
- Nelson-Gray, R.O., Huprich, S.K., Kissling, G.E., & Ketchum, K. (2004). A preliminary examination of Beck's cognitive theory of personality disorders in undergraduate analogs. *Personality and Individual Differences*, 36, 219-233.
- Nelson-Gray, R. O., Mitchell, J. T., Kimbrel, N. A., & Hurst, R. M. (2007). *The development and maintenance of personality disorders: A behavioral perspective*. Manuscript submitted for publication.
- Nelson-Gray, R. O., & Paulson, F. (2004). Behavioral assessment and the DSM system. In S. N. Haynes & E. H. Heiby (Eds.), *Volume on behavioral assessment* (pp. 470-486). In M. Hersen (Ed.), *Comprehensive handbook of psychological assessment*. New York, NY: Wiley.

- Ng, R. M. K. (2005). Cognitive therapy for obsessive-compulsive personality disorder: A pilot study in Hong Kong Chinese patients. *Hong Kong Journal of Psychiatry*, 15(2), 50-53.
- Novaco, R. W. (1975). *Anger control: The development and evaluation of an experimental treatment*. Oxford, England: Lexington.
- Oldham, J. M., Skodol, A. E., Kellman, H. D., Hyler, S. E., Doidge, N., Rosnick, L., et al. (1995). Comorbidity of Axis I and Axis II disorders. *American Journal of Psychiatry*, 152, 571 – 578.
- Paris, J. (2003). *Personality disorders over time: Precursors, course, and outcome*. Washington, DC: American Psychiatric Press.
- Paris, J., & Zweig-Frank, H. (2001). A twenty-seven year follow-up of borderline patients. *Comprehensive Psychiatry*, 42, 482-487.
- Philipsen, A. (2006). Differential diagnosis and comorbidity of attention-deficit/hyperactivity disorder (ADHD) and borderline personality disorder (BPD) in adults. *European Archives of Psychiatry and Neurological Sciences*, 256, 42-46.
- Poreh, A. M., Rawlings, D., Claridge, G., Freeman, J. L., Faulkner, C., & Shelton, C. (2006). The BPQ: A scale for the assessment of borderline personality based on DSM-IV criteria. *Journal of Personality Disorders*, 20, 247-260.
- Pratt, S., & Mueser, K. T. (2002). Social skills training for schizophrenia. In S. G. Hofmann & M. C. Tompson (Eds.), *Treating chronic and severe mental illness* (pp. 18-52). New York, NY: Guilford Press.
- Premack, D. (1965). Reinforcement theory. In D. Levine (Ed.), *Nebraska symposium on motivation* (pp. 123-180). Lincoln, NE: University of Nebraska Press.
- Raine, A. (1991). The SPQ: A scale for the assessment of schizotypal personality based on the DSM-III-R criteria. *Schizophrenia Bulletin*, 17, 555-564.
- Raskin, R., & Terry, H. (1988). *A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity*. *Journal of Personality and Social Psychology*, 54(5), 890-902.
- Ravelski, E., Sanislow, C. A., Grilo, C. M., Skodol, A. E., Gunderson, J. G., Tracie Shea, M., et al. (2005). *Avoidant personality disorder and social phobia: Distinct enough to be separate disorders?* *Acta Psychiatrica Scandinavica*, 112, 208 – 214.
- Reich, J. (2001). *The relationship of social phobia to avoidant personality disorder*. In S. G. Hofman & P. M. DiBartolo (Eds.), *From social anxiety to social phobia: Multiple perspectives* (pp. 148 – 161). Needham Heights, MA: Allyn & Bacon.

- Renneberg, B., Goldstein, A. J., & Phillips, D. (1990). *Intensive behavioral group treatment of avoidant personality disorder*. *Behavior Therapy*, 21(3), 363-377.
- Repp, A.C., & Horner, R.H. (1999). *Functional analysis of problem behavior: From effective assessment to effective support*. Belmont, CA: Wadsworth.
- Robins, C. J., Schmidt, H., & Linehan, M. M. (2004). *Dialectical behavior therapy: Synthesizing radical acceptance with skillful means*. In S. C. Hayes, V. M. Follette, & M. M. Linehan (Eds). *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition* (pp. 30-44). New York, NY: Guilford.
- Robinson, J. C., & Lewinsohn, P. M. (1973). *Behavior modification of speech characteristics in a chronically depressed man*. *Behavior Therapy*, 4, 150-152.
- Rossi, G., Hauben, C., Van den Brande, I., & Sloore, H. (2003). *Empirical evaluation of the MCMI-III personality disorder scales*. *Psychological Reports*, 92, 627-642.
- Salter, A. (1949). *Conditioned reflex therapy, the direct approach to the reconstruction of personality*. Oxford, England: Creative Age Press.
- Siever, L. J., Bernstein, D. P., & Silverman, J. M. (1995). *Schizotypal personality disorder*. In W. J. Livesley (Ed.), *The DSM-IV personality disorders* (pp. 71-90). New York, NY: Guilford Press.
- Simonsen, E., & Widiger, T.A. (2006). *Introduction*. In T.A. Widiger, E. Simonsen, P.J. Sirovatka, & D.A. Regier (Eds.), *Dimensional models of personality disorders* (pp. xxv-xxxiii). Washington, D.C.: American Psychiatric Association.
- Smith, L. D., & Peck, P. L. (2004). Dialectical behavior therapy: A review and call to research. *Journal of Mental Health Counseling*, 26, 25-38.
- Sperry, L. (2006). *Cognitive behavior therapy of DSM-IV-TR personality disorders: Highly effective interventions for the most common personality disorders*. New York, NY: Taylor & Francis.
- Strauss, J. L., Hayes, A. M., Johnson, S. L., Newman, C. F. Brown, G. K., Barber, J. P., et al. (2006). Early alliance, alliance ruptures, and symptom change in a nonrandomized trial of cognitive therapy for avoidant and obsessive-compulsive personality disorders. *Journal of Consulting and Clinical Psychology*, 74(2), 337-345.
- Stravynski, A., Lesage, A., Marcouiller, M., & Elie, R. (1989). A test of the therapeutic mechanism in social skills training with avoidant personality disorder. *Journal of Nervous and Mental Disease*, 177(12), 739-744.
- Strosahl, K. D. (2005). *ACT with the multi-problem patient*. In S. C. Hayes & K. D. (Eds.), *A practical guide to acceptance and commitment therapy* (pp. 209-245). New York, NY: Springer Science & Business Media.

- Tillfors, M., Furmark, T., Ekselius, & Fredrikson, M. (2004). Social phobia and avoidant personality disorder: One spectrum disorder? *Nordic Journal of Psychiatry*, 58, 147 – 152.
- Trull, T. J., Nietzel, M. T., & Main, A. (1988). The use of meta-analysis to assess the clinical significance of behavior therapy for agoraphobia. *Behavior Therapy*, 19, 527 – 538.
- Turner, R. (2000). Naturalistic evaluation of dialectical behavior therapy-oriented treatment for borderline personality disorder. *Cognitive and Behavioral Practice*, 7, 413-419.
- Tyrer, P., Morgan, J., & Cicchetti, D. (2004). The Dependent Personality Questionnaire (DPQ): A screening instrument for dependent personality. *International Journal of Social Psychiatry*, 50, 10-17.
- Ullmann, L. P., & Krasner, L. (Eds.) (1965). *Case studies in behavior modification*. New York, NY: Holt, Rinehart, & Winston.
- Verheul, R., van den Bosch, L. M. C., Koeter, M. W. J., de Ridder, M. A. J., Stijnen, T., & van den Brink, W. (2003). Dialectical behavior therapy for women with borderline personality disorder. *British Journal of Psychiatry*, 182, 135-140.
- Weiss, R.D., Najavits, L. M., Muenz, L. R., & Hufford, C. (1995). Twelve-month test-retest reliability of the structured clinical interview for DSM-III-R personality disorders in cocaine-dependent patients. *Comprehensive Psychiatry*, 36(5), 384-389.
- Wolpe, J. (1958). *Psychotherapy by Reciprocal Inhibition*. Stanford, CA: Stanford University Press.
- Zanarini, M. C., Frankenburg, F. R., Hennen, J., & Silk, K. R. (2003). The longitudinal course of borderline personality disorder. *American Journal of Psychiatry*, 160, 274-283.
- Zanarini, M.C., Gunderson, J.G., Frankenburg, F.R., & Chauncey, D.L. (1989). The revised diagnostic interview for borderlines: Discriminating BPD from other Axis II disorders. *Journal of Personality Disorders*, 3, 10-18.
- Zinbarg, R.E., Craske, M.G., & Barlow, D.H. (1993). *Mastery of your anxiety and worry: Therapist guide*. United States of America: Graywind Publications Inc.

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