PART I

GENERAL ISSUES

CHAPTER 1

Overview of Behavioral Assessment with Children and Adolescents

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Behavioral assessment has evolved rapidly since Hersen and Bellack (1976) first surveyed the field over 30 years ago. Child behavioral assessment (CBA), in particular, has grown increasingly complex. Whereas the earliest treatments of behavioral assessment focused on broad areas of concern such as "behavioral excesses" and "behavioral deficits," contemporary efforts "suggest a field that is becoming more inclusive, and at the same time more highly specialized" (Reitman, 2006, p.3). Much of the growing specialization in behavioral assessment has been fueled by the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM;* American Psychiatric Association, 2000). Indeed, *Child Behavioral Assessment* (Ollendick & Hersen, 1984) devoted only a single chapter to diagnostic issues. By contrast, a recent special section of the *Journal of Clinical Child and Adolescent Psychology* (see Mash & Hunsley, 2005) emphasizes the *DSM* taxonomy yet reveals limitations in *DSM*-focused assessment that has broad implications for CBA (see Kazdin, 2005; Pelham, Fabiano, & Massetti, 2005). In this overview, we discuss CBA past and present and offer some perspectives on the future of research and practice in this ever-developing field.

DEFINING CHILD BEHAVIORAL ASSESSMENT

Over the past 25 years, efforts to define behavioral assessment and evaluate its adequacy have been numerous (Haynes, 1998; R. O. Nelson, 1983; Reitman, 2006). In one of the earliest attempts to define the field, Ollendick and Hersen (1984, p. 6) defined CBA as "an exploratory hypothesis testing process in which a range of specific procedures is used in order to understand a given child, group or social ecology and to formulate and evaluate specific intervention strategies." Through the 1980s, CBA continued to be defined in relation to traditional, psychodynamically informed

Table 1.1
Purposes of Evidence-Based Assessment

Purpose	*Definition and Example*
Diagnosis and case formulation	Determining the nature or causes of the presenting problems (formally or informally)
Screening	Identifying children who have or are at risk for a particular problem and who might be helped by further tests or treatment
Prognosis	Generating predictions about the course of the problems if left untreated; recommendations for possible courses of action to be considered and their likely impact on the course of the problems
Treatment design and planning	Selecting or developing and implementing interventions designed to address children's problems by focusing on elements identified in a diagnostic evaluation
Treatment monitoring	Tracking changes in symptoms, functioning, psychological characteristics, intermediate treatment goals, and variables determined to cause or maintain problems
Treatment evaluation	Determining the effectiveness, social validity, consumer satisfaction, and cost-effectiveness of intervention

Source: "Evidence-Based Assessment of Child and Adolescent Disorders: Issues and Challenges," by E. J. Mash and J. Hunsley, *Journal of Clinical Child and Adolescent Psychology, 34*, 2005, p. 366. Reprinted with permission.

assessment. Thus, for example, behavioral assessment was described as emphasizing cross-situational variability, whereas traditional assessment assumed stable personality traits (see Mash & Terdal, 1988). Although older definitions of CBA are helpful in contrasting traditional assessment and early CBA, these definitions seem less capable of revealing the subtle but important differences in assessment practices that have emerged in contemporary CBA. Many authors have taken note of the plethora of behavioral assessment methods and their diverse functions (see Elliott & Piersel, 1982; Hawkins, 1979; Kelley, 2003), and recent interest in evidence-based assessment has highlighted this diversity. Most recently, Mash and Hunsley (2005) have argued that contemporary CBA is comprised of a complex array of assessment operations, including (a) diagnosis and case conceptualization, (b) early identification (screening), (c) prognosis, (d) treatment design and planning, (e) treatment monitoring, and (f) treatment evaluation (see Table 1.1 for details). Reitman (2006) reviewed previous definitions of CBA (including Hersen & Ollendick's) and suggested that recent developments in behavioral theory could signal an opportunity to refine our understanding of behavioral assessment. To this end, we briefly explore the relationship of conceptualization and assessment before presenting a revised definition of child behavioral assessment.

Case Conceptualization and Assessment

Case conceptualization is the process of developing hypotheses about client difficulties, including historical events, antecedent events, and other factors contributing to the maintenance of presenting problems (Freeman & Miller, 2002). According to Eells (1997), conceptualization has four basic purposes. First, conceptualization is a tool for organizing complicated and contradictory information. This process of collecting,

organizing, and integrating clinical information is especially important for students and beginning therapists. Second, case conceptualization can serve as a blueprint for treatment planning. Third, the process of identifying important clinical issues can foster the development of a working alliance between therapist and client. Fourth, the development of a good working alliance may neutralize obstacles to treatment and client resistance, thus enhancing treatment outcome. It is most notable that in Eell's description of case conceptualization, the line between assessment and treatment is inexact, and the processes seem more complementary than one might surmise based on the rather independent development of assessment and treatment literatures in contemporary clinical child psychology.

Conceptualization efforts can be traced to the diagnostic approach used in Hippocratic and Galenic medicine (Eells, 1997). Hippocratic physicians integrated the information obtained from a comprehensive examination and observation of all five senses to clarify the underlying cause of the presenting symptoms. A Greek physician, Galen of Pergamum, was the first to emphasize the importance of understanding the anatomic structures and function as the foundation of disease. Galen used experimentation to understand anatomy, and the notion of testing formulations remains an important part of some forms of behavioral case conceptualization. For example, some behavioral clinicians use functional analysis to identify possible cause-and-effect relations between environmental events and maladaptive behavior (Freeman & Miller, 2002). An additional aspect of case formulation that was adopted from medicine is the practice of obtaining posttreatment information to confirm the conceptualization (i.e., diagnosis).

Many clinical scientists regard the case conceptualization as a working hypothesis that may include a variety of factors, such as information about early childhood trauma, developmental history, biological influences, maladaptive schemas, or reinforcers (Eells, 1997). Because conceptualization itself is generic, the specific hypotheses that arise from this process are themselves a function of the theory of psychotherapy and psychopathology adopted by the clinician (Orvaschel, Faust, & Hersen, 2001). Thus, good case conceptualization is regarded as rooted in an identified theory. Theoretical assumptions about the relevance of certain kinds of information vary from theory to theory, alter the clinician's perception of abnormal behavior, and, most important from an assessment perspective, influence the selection of behaviors that need to be assessed (and, presumably, changed; Eells, 1997).

Taking a slightly different view, Meier (1999) characterizes case conceptualization as a two-level process. Level 1 consists of descriptive information that informs the process of hypothesis development, and level 2 consists of the prescriptive recommendations generated from the hypothesis. The descriptive level includes the history of the presenting problem; previous psychological problems; developmental, social, and medical history; stressors; and mental status examination results. The similarity of level 1, the descriptive level, to contemporary *DSM*-focused assessment is readily apparent. The prescriptive level emerges from the hypotheses about the function of the target behavior and offers a treatment plan (Eells, 1997). Prescriptive-level case conceptualizations include the type of therapy, frequency and duration, therapy goals, obstacles that may interfere with treatment, prognosis, and referrals for adjunctive interventions. As will be shown later in the chapter, many, but not all, CBAs use functional assessment to generate definitions of target behavior problems, document important antecedent and consequent events, and gain a better understanding of the

functions of problem behavior (Freeman & Miller, 2002). A key question explored in this chapter is the weighting of these assessment practices (i.e., descriptive or prescriptive) in contemporary and future CBA.

BEHAVIORAL CONCEPTUALIZATION AND CHILD BEHAVIORAL ASSESSMENT

In a conceptual analysis and historical overview of behavior therapy, Hayes, Follette, and Follette (1995) suggest that behaviorism has passed through four stages: an initial stage in which Watson's (1914/1967) methodological behaviorism distinguished itself, a second stage in which behavioral researchers in the operant tradition (e.g., Azrin, Baer, Risley) explored applied problems, a third stage characterized by the ascendance of cognitive theory, and a fourth stage in which the methodological and cognitive streams blended to form contemporary, mainstream behavior therapy (i.e., empirical-clinical psychology). Although the methodological and cognitive streams merged, the operant tradition continued to evolve. Extending Hayes et al.'s argument, we suggest that behavioral assessment has evolved along lines comparable to behavior therapy. We argue here that the distinction drawn between the methodological-cognitive and contextual-operant traditions in *behavior therapy* can be readily extended to *behavioral assessment.*

Since at least the early 1980s, two rather distinct streams or traditions in contemporary applied behavioral work are apparent: the empirical-clinical and the contextual (operant). Drawing on experiences in the operant laboratory, so-called radical behaviorists came to value data derived from repeated observations and direct manipulation of consequences (contingencies). Championed by B. F. Skinner, the operant tradition enjoyed widespread acceptance throughout the post–World-War II period and through the 1960s and early 1970s. Also described as contextualism (see Hayes et al., 1995), the operant tradition became known as applied behavior analysis, with many successful applications in child populations and adult (institutional) settings. By contrast, the mechanistic/structural or neobehavioral view pioneered by Watson, Wolpe, and Beck matured in the context of adult outpatient practice and is today closely identified with cognitive and cognitive-behavioral therapies. With respect to assessment practices, the demands of working with adults and children with internalizing problems such as anxiety and depression led methodological behaviorists to relax emphasis on direct observation and promoted a greater reliance on self-reports and behavioral rating scales. Because contingency control and access to clients and their cognitions may be limited, methodological behaviorists are also more tolerant of inference and, perhaps, more sensitive to the challenges associated with gathering data from outpatients. For their part, contextual behaviorists went on to refine methods for developing contingency (functional) analysis (e.g., Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994).

By 1990, the discrepancies between the two traditions had become sufficiently large that Gross was compelled to comment on "drift" from early definitions of behavioral research and practice appearing in *Behavior Therapy.* Specifically, he pointed out that earlier research and practice in behavioral assessment emphasized individualized, direct assessment of behavior and minimized inference. Other key features of behavioral assessment were the development of functional hypothesis and repeated, ongoing assessment to ensure that incorrect analyses would be modified to achieve treatment goals (for details, see Table 1.1; Mash & Terdal, 1988; Silva, 1993). With hindsight, it

can now be said that the drift noted by Gross and decried by others (Krasner, 1992) pointed to the continued evolution and divergence of the two streams of behavior therapy. Interestingly, in recent years, rating scales have emerged as the most commonly used form of behavioral assessment (Cashel, 2002; Reitman, 2006), at least in the methodological tradition. Further, cognitively oriented child clinical work, while emphasizing the rigorous empirical, data-based, and objective aspects of laboratory research, placed greater emphasis on topographical-structural descriptions of child behavior problems and relatively less emphasis on contingency analysis and context than was characteristic of earlier approaches to behavioral assessment (see Mash & Terdal, 1988).

At the time Ollendick and Hersen (1984) crafted their oft-cited definition of behavioral assessment, the *DSM* had scarcely begun to include information relevant to behavioral work with children. However, given the diverse purposes associated with behavioral assessment today, it seems unlikely that any one definition can meaningfully capture the complex functions of CBA. Returning to Mash and Hunsley's (2005) discussion, the past 20 years of CBA have emphasized the diagnostic, epidemiological, and prognostic functions of behavioral assessment, while less attention has been paid (until recently) to its other purposes, specifically, informing treatment design and promoting efficient treatment monitoring and evaluation (see Kazdin, 2005; Mash & Hunsley, 2005). Put in Ollendick and Hersen's terms, contemporary CBA can be thought of as involving two distinct but potentially complementary approaches to hypothesis testing. One approach involves assigning individuals to categories (i.e., establishing differential diagnosis and/or comorbidity). Some authors have identified this approach as "taxonomic diagnosis" (Mash & Wolfe, 2005). We here suggest that the term *diagnostic assessment* be applied when CBAs seek information intended to inform diagnosis. Further, when the nature of the hypothesis testing concerns not which diagnosis is most appropriate, but the purpose, cause, or function of behavior, this activity may be called *functional assessment.* This form of behavioral assessment can also be understood as "problem-solving analysis" (Mash & Wolfe, 2005). Functional assessment is distinguished from *functional analysis* because no attempt is made to manipulate sources of control in the former case (Alberto & Troutman, 2003). Both diagnostic and functional assessment can thus be included under the larger domain of "behavioral assessment."

For the purposes of this chapter, examples of diagnostic assessment include such activities as conducting interviews with the express purpose of isolating symptoms of *DSM* disorders and establishing their onset or prevalence as well as level of functional impairment (needed to establish diagnosis). Additionally, use of parent, teacher, or child self-ratings to determine the presence or absence of symptoms needed to meet the threshold for establishing deviance from a normative sample would also be considered diagnostic assessment. By contrast, use of interviews (whoever the respondent) to elicit information about the circumstances that give rise to problem behavior as well as the factors that seem to influence the frequency of the problem would be considered functional assessment. In addition, behavioral observations conducted to test hypotheses about function (e.g., whether oppositional behavior was related to escape- or attention-based reinforcement, or both) would be consistent with functional assessment. Simply counting behavioral problems or symptoms, regardless of how well the target behavior is defined, is not functional assessment—unless there is an effort to gather information about setting events, antecedents, and consequences. (See Table 1.2 for additional facets of diagnostic and functional assessment.)

Table 1.2
Behavioral Assessment: Diagnostic and Functional Approaches

Type of Behavioral Assessment	*Diagnostic*	*Functional*
Purpose	Identify diagnostic category that best fits symptom presentation.	Identify environmental influences (broadly construed) on behavior in context.
Commonly used methods	Use diagnostic interview, Likert-type rating scales (age- and/or gender-normed), observations/self-monitoring (presence/absence).	Use functional-diagnostic interview (identify setting events, antecedents, behavior, and consequences; ABCs), observations/self-monitoring (emphasizes identifying manipulable ABCs and setting events). Rating scales used less frequently.
Outcomes	Pre- and (sometimes) posttreatment assessment.	Outcome data used to evaluate effectiveness and guide clinical decision making on a session-by-session basis.
Treatment logic	Diagnosis dictates treatment. Diagnostically focused treatment manuals with empirical support.	Interventions designed to meet functional needs, teach and shape skills that permit acquisition of reinforcement in a socially acceptable manner. Treatment selection based on manipulating factors that influence setting events, discriminative stimuli, or motivational operations.

From "Overview of Child Behavioral Assessment" (pp. 4–24), by D. Reitman, in *Clinician's Handbook of Child Behavioral Assessment*, M. Hersen (Ed.), 2006, New York: Elsevier. Adapted with permission.

Based on the conceptual analysis offered here, we argue that CBA should be redefined as a multidimensional approach to data collection and analysis in which a range of procedures is used to facilitate clinical decision making for children or groups of children. It has been suggested that diagnostic and functional assessment constitute two different but potentially complementary approaches to clinical decision making. After 20 years of being estranged, it appears that greater balance between diagnosis-driven and functional assessment is on the horizon (see Kazdin, 2005; Mash & Hunsley, 2005; McMahon & Frick, 2005; Pelham et al., 2005; Reitman & Hupp, 2003). Finally, as discussed at the close of this chapter, it is possible, and perhaps even profitable, to engage in both types of assessment activity. However, to appreciate the merits of these approaches, one must be able to distinguish between them (Cone, 1998; Haynes, 1998).

CONTEMPORARY TRENDS IN CHILD BEHAVIORAL ASSESSMENT

There have been numerous efforts to classify the various forms of behavioral assessment. Among the most notable efforts to accomplish this task was Cone's (1978) behavioral assessment grid or BAG, which offered a taxonomy of assessment tools based on the kinds of information obtained (i.e., contents: cognitive, motor, etc.), methods

used to obtain the information (e.g., interview, self-report. ratings), and universes of generalizability (e.g., time, setting). Most forms of behavioral assessment have previously been reviewed, including general reviews (see Reitman, Hummel, Franz, & Gross, 1998) and reviews that focus on one or more of the grid elements in the BAG (e.g., direct observation: Roberts, 2001; interviews: Orvaschel, 2006; lab-based or computerized assessment and activity assessment: Rapport, Kofler, & Himmerich, 2006). Readers interested in detailed accounts of the various forms of behavioral assessment are referred to those sources. A more compelling question for the purposes of this overview concerns the detection of time-related trends in CBA.

To examine trends in behavioral assessment over the past 40 years, Reitman (2006) conducted an informal electronic database search (i.e., PsychInfo) of dissertations, books and book chapters, and journals. These sources were examined for the terms "behavioral assessment," "direct observation," "functional assessment or functional analysis," "parent report or parent rating,"* "teacher report or teacher rating,"* and child-related synonyms (e.g., child, children, adolescent*). The results suggested remarkable growth in CBA research overall. In addition, although growth in entries including the term "direct observation" (a frequently identified core element of behavioral assessment) have not kept pace with "behavioral assessment," there has been substantial growth in publications involving parent and teacher ratings and functional assessment. Overall, since 1960, publications in child behavioral assessment appear to have outpaced general child assessment by roughly 5 to 1. During that same period, growth in projective assessment has been flat. Notably, in the 10-year span from 1990 to 2000, research featuring parent and teacher ratings appeared roughly 800 times (each) compared to 200 publications featuring functional assessment (see Figure 1.1).

TRENDS IN ASSESSMENT RESEARCH: DIVERGENCE OF THE STREAMS

The methodological-cognitive and contextual traditions in behavioral assessment have been evolving more or less independently for the better part of the past 25 years. Next we highlight the major events contributing to development of each behavioral

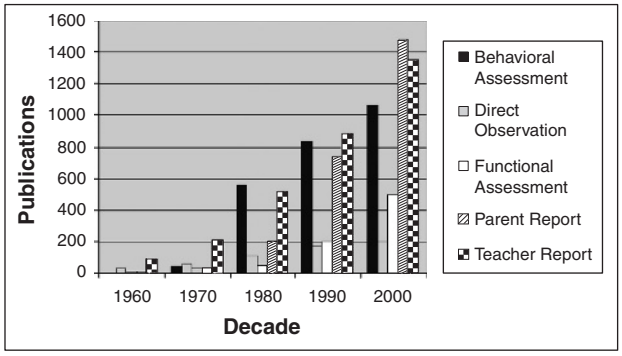

Figure 1.1 Publications trends in child behavioral assessment by decade. *Note*: Publication data from 2000 to 2004 were doubled to estimate the most recent decade. From "Overview of Child Behavioral Assessment" (pp. 4–24), by D. Reitman, in *Clinician's Handbook of Child Behavioral Assessment*, M. Hersen (Ed.), 2006, New York: Elsevier. Adapted with permission.

assessment tradition. The methodological-cognitive stream has influenced and been influenced by the *DSM*, whereas assessment activity in the contextual stream has been organized around the functional assessment construct.

The Rise of Diagnostic Assessment

Since the introduction of *DSM-III* (American Psychiatric Association, 1980), the *DSM* has enjoyed greater acceptance with each revision. A landmark in this evolution concerns the addition of a separate section in the *DSM-III* focusing on "disorders usually first diagnosed in infancy, childhood, or adolescence" and acknowledgment in *DSM-III* and the research literature that adult forms of psychopathology such as depression and anxiety might also be observed in children. Concern among behavioral practitioners about the implications of widespread acceptance of *DSM* and the medical model has certainly waned since the inception of behavior therapy (Follette & Hayes, 1992). Indeed, one consequence of the increased acceptance of the *DSM* nosology has been to blur the distinction between traditional assessment and behavioral assessment (see Table 1.2). In addition to economic pressures to adopt the system, several factors have contributed to the *DSM*'s greater acceptance among CBAs, including the *DSM*'s atheoretical approach (but see Krasner, 1992, for another view), improvements in interrater reliability, greater attention to developmental factors, and reductions in the level of inference required to identify symptoms (Mash & Wolfe, 2005).

Greater specialization appears to be another trend in contemporary CBA, no doubt related to greater acceptance of the *DSM* nosology. Today's clinical child researchers and practitioners readily acknowledge distinctions between internalizing and externalizing problems, and many describe their expertise in such terms (e.g., child-externalizing). Subspecialization in assessment practices is also beginning to emerge, and this development may fuel further subspecialization among child practitioners. For example, in the externalizing domain, interviews and rating scales tend to dominate lists of assessment practices for the disruptive behavior disorders (e.g., Attention-Deficit/Hyperactivity Disorder [ADHD], Oppositional Defiant Disorder, and Conduct Disorder), but state-of-the-art ADHD assessment is likely also to include direct observation (either analogue or naturalistic), supplemented by laboratory tests and self-report data (Gordon, 1997; Reitman & Hupp, 2003). By contrast, because of concerns about parents' ability to provide useful information and adolescents' willingness to supply it, file reviews and permanent product records (e.g., disciplinary records, classroom attendance logs; Frick, 1998; Patterson, Reid, & Dishion, 1992) have become staples in the diagnostic assessment of Conduct Disorder.

Choice of assessment targets and measurement strategies may also be influenced by research. For example, developmental psychopathologists have found that aggressive behavior may be expressed differently by boys and girls and that outcomes associated with conduct problems may be related to time of onset (Robins & Rutter, 1990). Similarly, McMahon and Frick (2005) note that important developmental considerations may even dictate assessment of social and community-based risk factors that diverge significantly from assessment procedures in general outpatient clinics (e.g., assessment of callous-unemotional traits, use of analogue assessment procedures). Many of the changes in the forthcoming *DSM-V* will attempt to redress shortcomings in the *DSM*'s treatment of developmental issues (Pine et al., 2002).

Finally, greater specialization is also apparent in research involving internalizing disorders such as anxiety disorders. Specifically, parents may be limited in their ability

to provide diagnostic information and children may be reluctant or unable to talk about their fears. Behavioral avoidance tests (BATs) have been utilized to provide clearer evidence of impaired functioning than can typically be acquired via pencil-and-paper assessments. In some cases, BATs go beyond diagnostic considerations and are used to obtain functional assessment data in a manner comparable to the use of functional analysis in applied behavioral assessment (Silverman & Kurtines, 1996). Because mood and anxiety disorders among adults have largely been diagnosed with self-reports (e.g., Beck Depression Inventory, State-Trait Anxiety Inventory), measures of cognition and affect have been readily assimilated into assessment practices with children and adolescents (see Reynolds, 1994; Velting, Setzer, & Albano, 2004). In contrast to research and clinical work with children and adolescents diagnosed with internalizing problems, consideration of cognitive and affective variables has been less frequently observed in research involving externalizing children (see Pelham, Wheeler, & Chronis, 1998).

Rebirth of Functional Assessment

At one time, contingency analysis (also known as A-B-C [antecedent-behavior-consequence] analysis) was such a fundamental part of behavioral assessment that it scarcely warranted mention. Early CBA efforts routinely began with careful specification of target behaviors, setting events, antecedents, and consequent conditions (see Hawkins, 1986). As behavioral assessment matured, the assessment of context began to incorporate systemic factors and macrosocial factors such as the school environment. Although formal assessment of family factors was not common (e.g., the use of paper-and-pencil measures of family functioning), the development of parent-directed interventions (Patterson, 1965) and clinical work with children in institutions such as schools and hospitals has long demanded a high level of concern about the social environment (e.g., Van Houten et al., 1988). In contrast to the view that behavioral analyses must be simplistic or linear, Patterson and Reid's (1970) case study of a highly noncompliant and antisocial boy hypothesized numerous contextual factors (e.g., family stress, poverty) that might have contributed to maintenance and generalization failures. Goldiamond's (1984) nonlinear analyses of parenting are also symbolic of the more complex forms of functional assessment that have failed to receive sufficient attention in past reviews of behavioral assessment. Through the 1980s, Forehand and colleagues (e.g., Forehand & McCombs, 1988) conducted pioneering research on the relation of maternal depression and marital function to treatment outcome, thus setting the stage for assessment of a much broader range of child-, parent-, and family-level variables (Chronis, Chako, Fabiano, Wymbs, & Pelham, 2004). Nevertheless, by the early 1990s, functional assessment seemed to play a much less important role in mainstream child research in externalizing and internalizing populations, where evidenced-based treatments have tended to emphasize manualized interventions based on *DSM* taxa (see Reitman, 2006, for an extended discussion).

Although functional assessment appeared to wane in mainstream behavior therapy with children, it remained a cornerstone of ideographic treatments conceived in the applied behavior analytic tradition. Indeed, following refinements of well-described procedures for conducting functional analyses (see Iwata et al., 1982/1994), there has been an explosion of research in select populations of children and adolescents that are well-suited to experimental analyses. Specifically, functional analyses of problem behavior for children with developmental disabilities have become routine in this

population. Since the mid-1990s, functional analyses have been used almost to the exclusion of other methods, although rating scales and interviews are sometimes utilized (see O'Neill et al., 1997). Functional analyses involve direct manipulation of setting events, antecedents, or consequences (in analogue or in vivo situations) to test hypothesized relations between these manipulations and behavior change. Although brief, modified versions of functional analysis are now being adapted to suit the demands of children with typically developing functional capacity and a wider range of behavioral challenges (e.g., Northup & Gulley, 2001), they are not yet in widespread use. Functional assessments that do not involve direct manipulation of the child's environment have been increasingly utilized with higher functioning children, particularly as part of functional behavioral assessments mandated under the Individuals with Disabilities Education Act (1997; Alberto & Troutman, 2003; Noell, 2003). Growth in functional assessment in some school systems has been so rapid that experts have suggested that the rate of growth is too fast to ensure the development of high-quality, effective behavior support plans (see Sasso, Conroy, Peck-Stichter, & Fox, 2001). Finally, there has been increasing attention to functional assessment in the area of school refusal behavior. One study demonstrated that prescriptive treatments based on the function of school refusal appeared more effective than nonprescriptive treatments in which a standard treatment was applied without matching treatment to function (Kearney & Silverman, 1999).

Trends in Training and Practice

If assessment practices are to change, changes are likely to begin with graduate training. Twenty years ago, Elbert and Holden (1987) reported that child clinical interns were far more likely to utilize projective tests (75% to 88%) than either behavioral interviews (44% to 58%) or behavioral checklists (11% to 33%). A more recent survey indicated that training directors perceived training in cognitive-behavioral therapy as valuable, but the benefits associated with training in behavioral assessment were not evaluated (Stedman, Hatch, & Shoenfeld, 2001). By contrast, Elliot, Miltenberger, Kaster-Bundgaard, and Lumley (1996) found that the top five assessment practices among practicing behavior therapists were (defined as the percentage of clients that received it) interviews (94%), direct observation (52%), rating scales (49%), self-monitoring (44%), and interview with significant others (42%). Although results were not stratified by population (i.e., child versus adult), it is striking that academics were more likely than practitioners to report that clients completed standardized rating scales (67% versus 48%). Unfortunately, although both practitioners and academics reported use of direct observation with over 50% of their clients, details about the nature of the observations were not provided.

In the school system, utilization of functional assessment has been boosted by legislation that requires meeting due process requirements associated with changes in a child's educational placement (Noell, 2003). Nevertheless, while an increasingly strong database supports the efficacy of functional assessment when used with persons with developmental disabilities, limited data support the clinical utility of functional assessment with higher functioning children in school settings (Gresham, 2004; Nelson-Gray, 2003; Noell, 2003). Leaders in school-based assessment have voiced concern about widespread dissemination of functional assessment practices in advance of solid empirical data and have called for more research (see Gresham, 2004; Sasso et al., 2001). Toward that end, a recently published study attempted to adapt functional

assessment procedures to the school setting by developing function-based interviews and rating scales for teachers. Data from this preliminary study revealed that interrater agreement on a rank order of behavioral function was low (Kwak, Ervin, Anderson, & Austin, 2004). By contrast, another study suggested that agreement across measurement methods (e.g., interview and ratings) was acceptable and that treatment response was enhanced when informed by functional assessment (Newcomer & Lewis, 2004).

Despite some of the promising developments in CBA in recent years, there are significant economic challenges to overcome before empirically sound assessment can be more widely practiced. For example, anecdotal reports from CBAs suggest that reimbursement for traditional clinic-based testing has been limited in recent years (Kelley, 2003). McGlough and Clarkin (2004) note that many third-party payers distinguish between *evaluation* or *assessment* (sometimes called an intake or biopsychosocial interview) and *testing* (defined as norm-based, standardized evaluation intended to inform treatment planning or clarify complex diagnostic questions), with significant limitations being placed on the latter, more time- and resource-intensive efforts. So far, at least two studies suggest that practitioners working with children and adolescents feel that their ability to practice has been negatively affected by managed care (Cashel, 2002; Piotrowski, Belter, & Keller, 1998).

Although not limited to assessment, one implication of testing constraints imposed by managed care is a reduction in utilization of tests with limited or suspect psychometric qualities. Thus, though still popular, the use of projective tests, especially the Rorschach, appears to be declining. Notably, significant reductions in the administration of IQ and achievement tests are also evident (Cashel, 2002). This may reflect reductions in unnecessary or superfluous psychoeducational testing (e.g., as part of a battery of tests given without regard to presenting problems), but these reimbursement policies may also inhibit the administration of measures that contribute to treatment outcome or treatment monitoring. Given that well over half the children diagnosed with common externalizing problems like ADHD may have academic problems or learning disabilities (Lyon, Fletcher, & Barnes, 2003), reductions in psychoeducational assessment may constitute a legitimate threat to the hypothesis-testing approach endorsed by Ollendick and Hersen (1993). Without some form of psychoeducational assessment, the ability of the clinician to rule out the contribution of academic difficulties (e.g., poor tool skills) to behavioral problems may be hampered as well (see Allyon & Roberts, 1974; Witt & Beck, 2000).

Outside of managed care, behavioral assessment in the schools is likely to continue as dictated by federal law and local implementation policies. One factor that seems likely to impact the course of behavioral assessment concerns the emergence of RTI, or the response to intervention movement (Willis & Dumont, 2006). Advocates of RTI have argued strongly against perpetuation of the status quo in psychoeducational assessment and placement. Interestingly, assessment practices designed to inform treatment decisions are integral to attempts to reform intervention in the classroom, a theme that is also echoed in recent efforts to promote empirically based assessment in clinical practice settings. Interestingly, restrictions or limitations placed on psychoeducational testing by HMOs in the public sector and potentially by RTI advocates inside of schools could represent an opportunity for curriculum-based measurement, a system of assessment and intervention that is clearly based on a behavioral approach to instruction (see Shinn, 1989). Some curriculum-based techniques are similar to procedures employed in functional analysis in that they manipulate academic performance

parameters (e.g., task difficulty) to clarify the function of behavioral problems in the classroom (O'Neill et al., 1997). Many curriculum-based approaches also offer significant time savings relative to traditional psychoeducational testing (Witt & Beck, 2000). However, unless the utility of these procedures can be clearly established, it seems improbable that third-party payers will authorize payment for these services. For CBAs to take advantage of new technologies, efforts must be directed to educating both consumers and third-party payers about the empirically supported benefits of diagnostic *and* functional assessment.

In contrast to traditional assessment measures, sharp increases have been noted in the use of behavioral rating scales (e.g., Child Behavior Checklist or Conners' Rating Scales) by a theoretically diverse group of American Psychiatric Association-member clinicians working with children and adolescents (Cashel, 2002). Inquiring about HMO-related changes and their likely impact on their assessment practices, only rating scales (e.g., Behavior Assessment System for Children, Child Behavior Checklist, Conners' Parent Rating Scale, and Teacher Report Form) were expected to be utilized more frequently in future assessments. Cashel ultimately concluded that ease of use and interpretation may explain *both* the rising interest in behavioral rating scales and the continuing popularity of some forms of projective testing (e.g., Draw-A-Person, Sentence Completion, Bender-Gestalt). Users of behavioral assessment methods such as rating scales noted benefits in tracking client progress and modifying treatment focus and a desire to adhere to ethical guidelines concerning assessment and treatment (see Hatfield & Ogles, 2004; Lambert & Hawkins, 2004).

Taken together, existing studies of clinical practice suggest that widely available, well-normed, easily administered, and resource-efficient measurement tools would be welcomed by both third-party payers and clinicians. Diagnostic assessments utilizing efficient measures stand to gain, whereas traditional testing and more labor- and cost-intensive approaches may be in jeopardy. In school settings, the use of functional behavioral assessment has not always enjoyed widespread acceptance, but it appears to be on the rise, following legislation mandating its use.

THE FUTURE OF BEHAVIORAL ASSESSMENT: EVIDENCE-BASED ASSESSMENT

These are exciting times for CBA enthusiasts. Surveying the landscape of assessment in clinical practice, behavioral assessment has become commonplace, even among eclectic and nonbehavioral practitioners. A recent study suggested that interest in outcome assessment among behavioral and cognitive-behavior therapists working with children may well be higher than among other clinicians. Hatfield and Ogles (2004) reported that among a heterogeneous sample of 874 American Psychiatric Association-member child clinicians, only 37% reported routinely utilizing some form of measurement to track outcomes. However, that number rose to 50% among cognitive-behavioral therapists, and 54% among child clinicians in general (it was likely even higher among child clinicians with a cognitive-behavioral orientation, but these data were not reported).

In CBA research, there has been rapid growth in the number and variety of assessment tools and an explosion of studies examining their reliability and validity. However, despite the advances noted earlier, at least two major issues are likely to preoccupy behavioral scientists for the next decade and beyond. The first issue

concerns the validity and utility of existing assessment practices, a problem noted by Nelson and her colleagues nearly 20 years ago (Hayes, Nelson, & Jarrett, 1987). A second and related issue was raised by Kazdin (2005) and parallels the distinction between efficacy and effectiveness noted by Weisz and Weiss (1993). If empirically based assessment methods developed in research settings are seldom used in clinical practice, there is ultimately little need for such research. We close the chapter with a discussion of earlier attempts to improve the validity of assessment practices and possible solutions to problems presently confronting CBAs.

Evidence-Based Assessment

Ollendick and Hersen (1984, p. 4) argued that behavioral assessment has historically "been directed toward a description of current behavior and a specification of organismic and environmental conditions that occasion and maintain it." An important question addressed in this overview concerns how well that description applies to CBA as it is practiced today. As we have shown, rather than attending to factors that occasion problem behavior (in an ideographic sense), most research in CBA has largely focused on diagnostic assessment. Consequently, less attention has been devoted to the kinds of research activities needed to establish the reliability and validity of methods to evaluate treatment response. Further, only a limited amount of research that has occurred since the mid-1980s has concerned itself with the kind of assessment practices described by Ollendick and Hersen, and most of that work can be found in a small number of journals that emphasize the treatment of persons with developmental disabilities. Interestingly, the tenuous connection between *DSM* diagnosis and treatment success (see Pelham et al., 2005) has led clinical researchers to reexamine the relationship between assessment practices, treatment planning, and treatment outcome. Inasmuch as behavioral assessment was once defined by a strong link between assessment and treatment (see Gross, 1990; Hawkins & Mathews, 1999; Hayes, Nelson, & Jarrett, 1986), such questioning may well set the stage for a significant reprioritization of assessment practices, at least in university and research-based settings.

Given that diagnostically focused assessment has become the dominant assessment model employed by contemporary CBAs, it is somewhat surprising that so little work has been done to establish what Nelson-Gray (2003) calls "the treatment utility of assessment" for diagnostic assessment (Pelham et al., 2005). Defined as "the degree to which assessment is shown to contribute to beneficial treatment outcome"(Nelson-Gray, 2003, p. 521), the treatment utility of assessment derives from the concept of incremental validity (see Hayes et al., 1986, 1987). That is, to justify any evaluation practice, assessment methods and procedures must result in greater or more rapid treatment success than either no assessment or an established assessment practice. Alternatively, a given assessment approach might foster results comparable to an established procedure, but do so with fewer resources. A key aspect of determining the treatment utility of an assessment procedure is *experimental manipulation* (for details, see Hayes et al., 1986; Nelson-Gray, 2003) of some aspect of the assessment process (e.g., who has access to functional assessment data). Only when experimental manipulation occurs can the incremental validity of a given behavioral assessment practice be known (Johnston & Murray, 2003).

Recent interest in incremental validity gave rise to an important special section of the *Journal of Clinical Child and Adolescent Psychology* (Mash & Hunsley, 2005).

For example, in a review of common procedures employed in the assessment of ADHD, Pelham et al. (2005) argue that the use of lengthy structured interviews is of questionable utility for diagnosing the disorder. Instead, they suggest that brief measures completed by both parents and teachers, and brief observations and records containing information about a child's seatwork performance, are likely to be better indicators of an ADHD diagnosis. However, the determination of a measure's contribution as an aid to diagnostic efficiency or accuracy is not synonymous with treatment utility. Indeed, if diagnosis itself lacks treatment utility, then all assessment efforts directed toward diagnosis suffer.

Because of questions concerning the incremental validity of existing assessment practices for ADHD, Pelham et al. (2005) suggest that clinicians de-emphasize ADHD diagnosis and allocate more time to the functional assessment of problem behaviors associated with the diagnosis (i.e., outcomes; see Table 1.1). Functional behavioral assessments (FBAs) require that therapists identify the antecedents and consequences of problem behavior and systematically evaluate a number of competing hypotheses about the factors maintaining the behavior (e.g., Is the child's arguing a function of parent or sibling attention, escape from demands, or attempts to coercively obtain tangibles?). Although research has yet to demonstrate that the treatment utility of FBA is greater than the treatment utility of *DSM-IV* diagnostic criteria for ADHD, Nelson-Gray (2003) identified a number of experimental studies providing evidence to support the treatment utility of FBA for problem behaviors such as self-injury.

With respect to diagnostic assessment in CBA, Acierno, Hersen, and Van Hasselt (1998) argue that refinements in *DSM* taxonomies might produce more homogeneous groupings that could improve outcomes for structured, manualized, diagnosis-driven treatment approaches. Improved outcomes would provide indirect evidence of treatment utility. Cone (1998, p. 41) notes that such topographical behavioral assessments (what is here called diagnostic assessment) "could be subjected to functional evaluation. If assessment produced data describing topography that was then used successfully for some purpose, the assessment would be seen as functionally useful," even if it was not derived from a functional assessment. Similarly, Nelson-Gray (2003) suggested that even personality assessment (e.g., conscientiousness) could have treatment utility if, for example, a parent's "low conscientiousness" score predicted dropout or poor compliance with homework assignments. If "low scorers" could be distinguished, given a modified form of treatment based on their conscientiousness score, and demonstrated improved treatment outcome, the assessment data would have established treatment utility (Nelson-Gray, 2003, p. 522, terms this "the methodology of obtained differences"). Nelson-Gray also suggests that when diagnostic groupings are more heterogeneous, there may be a greater need for functional assessment methodologies.

Because many manualized treatments are based on a diagnosis-to-treatment model, the treatment utility of diagnostic assessment could be evaluated in that context (Acierno et al., 1998). For example, major empirically supported parent training models are relatively silent on the topic of functional behavioral assessment and appear to take a "structural" approach to treating externalizing problems (e.g., Hembree-Kigin & McNeil, 1995). Put another way, many manualized empirically supported parent-training programs neither explicitly teach functional assessment principles nor advise altering one's treatment approach based on the function of the behavioral problems displayed by the child. This is not an indictment of parent training approaches per

se, but it raises questions about the merits of diagnostic and functional assessment in contemporary behavioral practice with families. Mischel (1979, as cited in Ollendick & Hersen, 1984, p. 740) once raised concerns about personality assessment that still have salience in the present context:

> My intentions . . . were not to undo personality but to defend individuality and the uniqueness of each person against what I saw as the then prevalent form of clinical hostility: the tendency to use a few behavioral signs to categorize people enduringly into fixed slots on the assessor's favorite nomothetic trait dimensions and to assume that these slot positions were sufficiently informative to predict specific behavior and to make extensive decisions about a person's whole life.

With diagnostic assessment substituted for personality, ought we not question whether diagnostic assessment produces data that inform "extensive decisions" such as developing treatment plans and making placement recommendations that may strongly affect a young person and his or her family? If diagnostic assessment and the treatment-from-diagnosis logic underlying many manualized treatments are insufficient to produce positive outcomes, can functional assessment be offered as a viable alternative or supplemental approach? If so, it must be acknowledged that the treatment utility of functional assessment for persons not diagnosed with developmental disabilities has yet to be established (Nelson-Gray, 2003).

In addition to the many issues raised previously, questions about incremental validity can also be extended to multimodal assessment. Consensus regarding the need for multimodal assessments has become so uniform that the absence of data needed to inform clinical decision making or resolve inconsistencies across raters (e.g., parents, teachers, and self-report) might be surprising. In fact, concerns about combining information exist in both functional and diagnostic assessment traditions (Miltenberger, 2000; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Beyond questions of disagreement, critical questions also remain about the incremental validity of specific behavioral assessment practices utilized with children, including the computerized assessment of attention (Reitman et al., 1998), direct observation (Tryon, 1998), and teacher ratings (Handwerk, Larzerlere, Soper, & Friman, 1999; J. R. Nelson, Benner, Reid, Epstein, & Currin, 2002).

Applied Assessment

Whatever is claimed about the importance of incremental validity and empirically based assessment, it matters little if these bold initiatives do not translate into changes in clinical assessment practices. For many years, practitioners complained that the treatment research literature did not inform clinical practice (Barlow, 1981). Only recently have concerted efforts to address some of these concerns come to fruition (see Chorpita, 2007). Incidentally, modular treatments may increase the importance of assessment, as these kinds of interventions appear to require more specific information about functional impairments and response to treatment (see Chorpita, 2007).

Unfortunately, practitioners seeking to document and evaluate their effectiveness in outpatient settings have rarely been offered much that would be of use in clinical practice. One legitimate effort to assist practitioners was undertaken by Hawkins and colleagues (see Hawkins & Mathews, 1999; Hawkins, Mathews, & Hamdan, 1999), who advocated that clinicians adopt a level one research model that emphasized a

labor-nonintensive, free-wheeling kind of accountability that should improve one's effectiveness as a clinician. The level one approach dictates that clinicians systematically monitor clinical outcomes—without any need to scientifically prove what is causing those effects. A similar approach has recently been advocated by Lambert and his colleagues (Harmon, Hawkins, Lambert, Slade, & Whipple, 2005), with preliminary data showing that simple feedback to therapists based on systematic monitoring of clinical outcomes is very beneficial to client progress.

While determining treatment outcomes is the main focus of studies that might evaluate the utility of assessment, Hodges (2004) provides additional insight into the ways that assessment could be integrated into all stages of therapy. For example, when conducted during intake sessions, assessment can enhance therapist and parent agreement concerning the selection of intervention targets. Following this discussion, the therapist may utilize assessment information to develop a treatment plan that directly addresses the needs of the child, as well as the identified strengths and weaknesses of the family. Even when presenting problems are carefully identified, treatment selection may still be challenging. For example, Hodges points out that a comorbid diagnosis makes it difficult for the clinician to select an empirically supported treatment that will address both disorders. Likewise, Nelson-Gray (2003) explains that some disorders have more than one empirically validated treatment; however, no specific decision-making criteria currently exist to aid clinicians in selecting one treatment over another.

Although the development of empirically sound, user-friendly tools for managing and evaluating individual response to treatment have lagged behind the progress in *DSM*-based diagnostic practices, help may be on the way. To address many of the issues raised earlier, Kazdin (2005) has recommended adopting the following principles concerning the revision of existing behavioral assessment measures and the development of new measures and methods. Specifically, he recommended that more research be devoted to measures that:

- Are acceptable to clients and therapists (seen as reasonable, relevant, and worthwhile)
- Are feasible to administer (brief, user-friendly)
- Are easily adapted to track individualized patient concerns (e.g., goals)
- Can be used repeatedly and retain validity and be bidirectional (e.g., permit assessment of "getting worse" and "getting better")
- Can be applied across, or are relevant to, different treatments
- Lend themselves to assessment of change in meaningful units (e.g., have real-life referents)

At this point, it is unclear how Kazdin's (2005) recommendations will be received; however, it should be noted that much of what Kazdin suggests fits well within the behavior analytic (contextual) paradigm, which has long emphasized the importance of tracking socially meaningful behaviors, systematically, over time (see Hawkins & Mathews, 1999).

RAPPROCHEMENT: BLENDING DIAGNOSTIC AND FUNCTIONAL ASSESSMENT

Although the functional and diagnostic approaches can be distinguished, there have been efforts to combine these approaches, often with the implicit though untested assumption that such efforts would enhance treatment outcome. One approach to

blending diagnostic and functional approaches was introduced by Hawkins (1979), who argued that child assessment should be conceptualized as a "funnel." At the wide end of the funnel, child functioning is evaluated broadly, followed by a progressively more targeted behavioral assessment. Scotti, Morris, McNeil, and Hawkins (1996) elaborated on this model and suggested that functional assessment could be integrated with diagnostic assessment. Scotti et al. (1996) noted that functional assessment was not served well by the *DSM*'s existing axial format, but they did not recommend abandoning it. Instead, they argued that Axes I and II could be retained unchanged, with Axes III and IV adapted and refined to facilitate a more detailed (functional) account of setting events, antecedents, and consequences. Axis V would make better use of empirically supported measures to track outcomes.

It is presently unclear whether this blend of diagnostic and functional assessment is common practice among CBAs, but such a combination could ultimately prove to have strong incremental validity. In the absence of clear empirical data to guide clinical decision making, the consensus approach among CBAs seems to begin with treatment based on a largely diagnostic approach (i.e., treatment from diagnosis). If treatment results are unsatisfactory, functional assessment may then be utilized to enhance standard care (see Reitman & Hupp, 2003).

SUMMARY

Behavior therapy has undergone many changes since its inception in the 1950s. During its formative years, behavior therapy focused heavily on the development of more effective treatments, but the importance of behavioral assessment practices was relatively unappreciated until the late 1970s and early 1980s. Since the early 1980s, trends in therapy have continued to drive changes in assessment practices. Most recently, concerns have arisen over the merits of some forms of behavioral assessment. Specifically, questions have arisen about diagnostic assessment, especially in the realm of treatment monitoring and outcome evaluation. As a result, the next decade may well feature more research evaluating the utility of functional behavioral assessment and greater appreciation for the diverse functions of behavioral assessment in child behavior therapy. Finally, as with the evidence-based treatment movement, there appears to be a large gap between the assessment practices utilized by university and grant-funded researchers and assessment activities in clinical practice settings. The greater empirical scrutiny that is being brought to bear on assessment in clinical practice appears consistent with societal trends emphasizing demands for accountability outside of and within the mental health system (Lambert & Hawkins, 2004). Although preliminary data suggest the need for changes in assessment practices to accommodate the realities of clinical practice, there are only limited data concerning guidance on empirically based assessment as it should be practiced in the field.

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