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Introduction

"You see," he explained, "I consider that a man's brain originally is like a little empty attic, and you have to stock it with such furniture as you choose. A fool takes in all the lumber of every sort that he comes across, so that the knowledge which might be useful to him gets crowded out, or at best is jumbled up with a lot of other things so that he has a difficulty in laying his hands upon it. Now the skillful workman is very careful indeed as to what he takes into his brain-attic. He will have nothing but the tools which may help him in doing his work, but of these he has a large assortment, and all in the most perfect order. It is a mistake to think that that little room has elastic walls and can distend to any extent. Depend upon it there comes a time when for every addition of knowledge you forget something that you knew before. It is of the highest importance, therefore, not to have useless facts elbowing out the useful ones."

—SHERLOCK HOLMES, *A Study in Scarlet*

HOW THIS TEXT DIFFERS FROM MOST "ASSESSMENT" TEXTS

Although there are many assessment texts available to assist in the training of the next generation of assessors, they tend to be focused on training in testing rather than in assessment. Similarly, although there has been an important movement toward the practice of empirically based assessment in clinical work, thus far the empirical evidence for such has focused primarily on psychometric properties of specific tests or test batteries to answer very specific diagnostic questions. The goal of the present text is to present an empirically informed approach to the entire process of psychological assessment.

A Focus on Assessment, Not Testing

Assessment is a conceptual, problem-solving process of gathering dependable, relevant information about an individual in order to make an informed decision (American Psychological Association, 2000). At its heart, assessment is a decision-making process in which the assessor iteratively formulates and tests hypotheses by integrating data in a dynamic fashion (Hunsley & Mash, 2007). Like a good detective, a good assessor needs to know what information is relevant to gather, what tools are the most reliable and valid for gathering the relevant information, and the best methods for putting that information together in a way that allows for good decision making. In addition, the assessor needs to use that information in a way that benefits the person being assessed, and thus must effectively communicate both the assessment process and the decision or decisions resulting from that process to relevant individuals.

One vital "tool" essential for assessors to have in their toolbox is a comprehensive understanding of the processes involved in the administration, scoring, and interpretation of psychological tests. A competent assessor needs a competent understanding of psychometrics in order to critically consider the psychometric strengths and weaknesses of different assessment methods, including tests, for use with a particular client for a particular clinical purpose. However, testing and assessment are not the same thing, as assessment requires the integration of information collected from a number of sources, only one of which is formal test data (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999). Although tests can be used to improve assessment decision making, they are not always used well. Furthermore, as with other tools, when tests are used by those who are not trained to use them well, they can actually detract from good decision making.

Whereas a competent assessor needs knowledge about tests and their psychometric properties, he or she also needs a comprehensive understanding of the science underlying human behavior (both normal and abnormal). Thus, a competent assessor must understand psychopathology, neuroscience and neuropsychology, health psychology, developmental psychology, and diversity issues, to name a few, in order to guide decisions about the appropriate questions to ask and the appropriate (test and nontest) data to gather for a particular client and a particular assessment goal. Furthermore, a competent assessor needs well-developed clinical skills for gathering data, interpreting and integrating data, and presenting the

interpretation of evaluation results, as well as their implications, to clients and other referral sources.

Where does one begin learning the assessment process? Training programs (and beginning "assessment" textbooks) often start with (1) teaching students basic interpersonal skills relevant to clinical interviewing and (2) training students in psychometrics, administration, scoring, and interpretation of specific psychological tests in isolation. Although this approach is a good start and a critical foundation to assessment, there is so much more to assessment that an assessor must learn through continued training and experience. For example, even though an assessor may possess good clinical skills, such as being comfortable asking strangers difficult questions in what can be a stressful interaction, that assessor will not conduct a good intake interview until he or she has in his or her "brain-attic" the relevant biopsychosocial and developmental information needed to guide decisions about important questions to ask and data to gather. In addition, even though an assessor may have memorized all the diagnostic criteria for disorders based on a particular diagnostic system, and has learned to ask about them reliably in a structured diagnostic interview, the assessor will not use that tool accurately if he or she doesn't understand the underlying science of the disorders that he or she is simply asking about descriptively. Furthermore, although an assessor may know the psychometrics of any one psychological test, the assessment task at hand requires the assessor to integrate knowledge about results from that test with other assessment data, including the results of other tests and assessment data gathered using other methodology—a process that involves much larger and more integrative psychometric and statistical considerations. Those data, in turn, need to be integrated into a scientific understanding of the potential disorders or diagnoses (as well as normal human conditions) under consideration in order to interpret the findings accurately. In addition, the assessor needs to be aware of potential biases in decision making that affect every stage of the decision-making process, from the first hypotheses formed, the questions selected, the choice of data to gather, and the way in which those data are integrated together. Thus, it is not surprising that Acklin (2002, p. 15) stated that "competency in the field of assessment psychology is probably best viewed as an advanced postdoctoral specialization."

In 2002, the Board of Educational Affairs and Education Directorate of the American Psychological Association sponsored a Competencies Conference that outlined a model of training identifying specific foundational or functional competencies for psychological practice and described the development of these competencies in an additive fashion across various levels of training (Rodolfa et al., 2005). In 2009, the Competency Benchmarks

workgroup articulated clearly defined competencies within these foundational and functional areas to guide programs in using the competency-based model in their training of students (Fouad et al., 2009). In the functional competency area of assessment, the student at the beginning level of training should be focused on developing basic knowledge of the scientific, theoretical, and contextual basis of assessment, including initial knowledge of the constructs being assessed, the psychometric properties of measures of those constructs, and how to administer and score traditional psychological measures as well as both standardized and nonstandardized clinical interviews. As noted above, these are the topics covered in most current assessment texts and in core assessment training at the predoctoral level. In addition, however, the beginning student should be developing (1) an appreciation of the decision-making complexities of reaching a diagnosis, (2) an awareness of the need for multiple sources of information to make a diagnosis or to conduct a case conceptualization, and (3) an understanding of the presentation of normal and abnormal behavior in the context of diverse individuals and contexts. These competencies develop as part of more advanced assessment courses and practica, as well as in crucial psychological breadth courses, and are core topics in the current text.

As students become more advanced in their training and are nearing readiness for internship, they are expected to apply their scientific knowledge in the accurate and consistent selection, administration, scoring, and interpretation of measures with attention to their psychometric properties and the population and context at hand; to adapt, as necessary, to environmental and client needs; and to integrate knowledge across diverse sources of data, with consideration of the strengths and limitations of those data, to inform clinical decision making. In addition, the more advanced students should be able to communicate assessment results in both written reports and in verbal report (e.g., a case presentation or feedback to the client). These are competencies that are expected to be developed prior to the internship year, and thus should also be the focus of formal assessment training during the predoctoral training years. Unfortunately, managed care has led to both underutilization of assessment in clinical practice and to a deemphasis on assessment training in graduate school, with most programs focusing on testing rather than on the problem-solving skills necessary to good assessment (Handler & Smith, 2012; Naglieri & Graham, 2012).

The current text takes the reader beyond a focus on the initial learning of basic assessment skills to using the scientific literature to address these other aspects of the entire assessment process. Using the competency training model, this text focuses on the level between that of the beginning graduate student who has not yet entered practical training and that of the

student who is immersed in practical training at either the advanced practicum or beginning internship level. Thus, the present text includes a more integrative coverage of assessment competencies for beginning graduate students, so that they can gain an appreciation for "what comes next" after they have begun to tackle fundamental assessment tasks in isolation, but also for more experienced trainees who have mastered the foundational assessment competencies and are now conducting assessments during their more advanced training or internship. In addition, the text may serve as a "refresher course" for practitioners seeking to enhance their assessment competencies.

A Scientific Approach to the Detective Work of Assessment

The overall assessment approach advocated in this text is one in which the assessor considers him- or herself to be a "scientific detective." The decision-making processes essential to good assessment are, in fact, similar to those utilized by that most famous (if fictional) of detectives, Sherlock Holmes. Those not familiar with Sherlock Holmes and his creator, Sir Arthur Conan Doyle, may find it interesting that Doyle, who was a physician, chose to model the character of Sherlock Holmes after one of his own medical professors (Dr. Joseph Bell, a surgeon with expertise in diagnostic assessment). As is seen in Chapter 2, although Sherlock Holmes was assumed to be a master of deductive reasoning, he also provides models for the appropriate use of inductive reasoning in the decision-making process.

Like the detective viewing "evidence" through the lens of the magnifying glass, an assessor must view the data at hand through various lenses, knowing when to focus in and take a closer look, and knowing when the information has no clinical value. To be a good scientific detective, an assessor needs to know the science of many subfields in psychology, as mentioned above, and must use scientific knowledge from those fields to examine available assessment data through multiple lenses (i.e., multiple hypotheses that have been informed by that scientific literature). The assessor also needs to become aware of when his or her lenses have become "biased" in some way and take appropriate steps to address that bias. Furthermore, just as detective work is dynamic, so too is the assessment process. A scientifically minded detective knows that, as evidence flows in, evidence in support of or against the working hypothesis/hypotheses may change. So too an assessor must realize that the dynamic process of assessment may lead to changes in the weight of evidence leaning toward or away from various diagnostic considerations—depending on what is learned from the interview, from collaterals, from behavioral observations, from prior records,

and from test scores—and that such a dynamic process may even affect what additional data need to be gathered beyond that initially conceptualized as relevant to the specific case.

There is no question that a scientifically minded assessor must, first and foremost, respect the validity of the data at hand, both that gathered directly by the assessor and that available from other sources. Thus, Chapter 6 focuses on the importance of understanding the psychometrics of assessment tools, including formal psychological tests; understanding the importance of standardized administration/data gathering; considering assessment factors that may affect the reliability and validity of any test or other assessment data in an individual setting; and considering decision-making issues related to interpreting any given test (and its subtests) in isolation. Because the focus of this text is assessment, not testing, the text does not include a comprehensive review of individual tests, but instead presents selected, well-validated psychological tests (Chapters 9–12) to illustrate key decision-making points about their use in assessment. It is hoped that these examples model (1) how assessors can use empirical methods for the selection and use of the most empirically validated tests for the specific assessment purpose under consideration; and (2) the need for assessors to update their knowledge of instruments they are accustomed to using, as new versions or updated psychometric and normative information become available.

As the most learned proponents of evidence-based assessment point out, an empirically based assessment approach is not just about the psychometric validity of any given psychological test in isolation, but also emphasizes the use of research and theory to (1) identify which constructs are most important to assess in any given case, (2) select the appropriate methods and measures used to assess those critical constructs, and (3) select the assessment process to undergo (Barlow, 2005; Hunsley & Mash, 2005, 2007). That assessment process requires integration of not only assessment data for multiple constructs across multiple methods of measurement, but integration with what is known about normal and abnormal development in relation to the particular constructs that are part of the presenting problems.

Assessment is inherently a decision-making task in which the assessor iteratively formulates and tests hypotheses by integrating data in a dynamic fashion. Indeed, examination of the evidence base for assessment should include evaluation of the accuracy and usefulness of this decision-making process, but at this point most of the existing literature on evidence-based assessment has focused on evidence for the value of specific tests or groups of tests for particular conditions (Barlow, 2005; Hunsley & Mash, 2005, 2007). Such "evidence" presumes that the first stages of the assessment

process were already valid (determining which specific hypotheses—that is, diagnoses—to consider for the individual being assessed); yet, the decisions made in this first stage of assessment are critical to an ability to interpret the validity of the tests under consideration, and require scientific knowledge well beyond that of test psychometrics. A major competency for students to master prior to independent practice is that of empirically informed clinical decision making (Fouad et al., 2009), and there is an identified need for more of this training during the predoctoral years (Belar, 2009; Gambrill, 2005; Harding, 2007) Thus, in several chapters, the scientific literature pertaining to other critical aspects of the assessment process are discussed. Because good assessment requires integration and decision-making processes at every step of the assessment, Chapter 2 discusses the decision-making biases that can affect every stage of the assessment process. In addition, research-informed guidelines for obtaining and using important assessment data from sources beyond formal tests are presented in Chapter 8. Furthermore, although little evidence currently bears on the last stage of the assessment process (integration of multiple sources of assessment data to reach informed decisions), Chapter 13 focuses on this vital aspect of the assessment process. Overall, the goal of this text is to demonstrate that inductive and deductive decision making by a scientifically minded assessor can lead to more accurate decisions and better care.

Emphasis on the Use of a Developmentally Informed Biopsychosocial Lens

As previously mentioned, knowledge of psychopathology from developmental, neurobiological, psychological, and sociocultural perspectives is important to every stage of a scientifically supported assessment, from the initial hypotheses developed to selection of the relevant test and extratest data to gather all the way to how to integrate the available information to make clinical decisions. Thus, a developmentally informed biopsychosocial perspective (see Chapter 3) is a crucial "lens" for a scientifically minded detective to wear when conducting an assessment. Furthermore, knowledge of neurobiological, developmental, psychological, sociological, and cultural contributions to test behaviors and test performance is crucial not only to interpreting performance on individual tests, but also to integration of material across tests and nontest data and may be highly important to the formulation of recommendations following the evaluation.

To illustrate this point with a nonpsychological example, consider a fever. A person can self-report symptoms of a fever ("feeling hot"), an examiner can observe signs of the fever (flushed face, shivering), and the

fever can even be measured with a standardized instrument (thermometer). However, none of that information explains *why* the person has the fever, which is essential to its correct treatment. Now consider the example of depressed mood. A person can self-report symptoms of depressed mood ("feeling sad"), an examiner can observe signs of the depressed mood (psychomotor retardation, restricted affective expression), and the depressed mood can even be measured with standardized (self-report) instruments. However, none of that provides information that explains potential contributory factors to the depressed mood, which could include neuroendocrine problems, brain damage, family history of depression, stressful life events, difficulty coping with other more serious psychological disorders, etc., and this information is essential to its correct treatment (and even to whether the person's depressed mood is consistent with any particular psychological diagnosis). Thus, a scientifically minded assessor is one who has adequate knowledge of developmental, psychological, cultural, sociological, and medical contributions to psychological complaints and concerns and examines the client's presenting, observed, and measured history and current symptoms through each of these informed lenses.

It is important to note that, in proposing the use of a biopsychosocial lens in assessment, the present text does not advocate any particular therapeutic orientation or etiological lens, but rather a consideration of all potentially relevant causal factors to the client's presenting concerns, based on existing scientific knowledge of both normal and abnormal human behavior. Just as psychologists who wear only a biological or only a sociological lens when assessing a client will miss relevant information, psychologists who wear the lens of only one specific psychotherapeutic orientation, regardless of the nature of the individual client's presentation, will view whatever the client brings to the very first session in a biased fashion, by focusing assessment attention only on issues consistent with that theoretical lens. It is also important to note that, even if there appear to be medical contributions to a presenting concern (which may as yet be undiagnosed), this does not entirely preclude a psychological approach to treatment (though it may certainly indicate a need for medical assessment/treatment in addition to psychotherapy, and in some cases, may suggest that psychotherapy is not indicated). What this text advocates for is the careful definition of the problems or concerns presented by a client and the gathering of information on all potential developmental, biological/medical, psychological, and sociocultural contributions to that client's presentation (i.e., a problem-focused assessment).

It is important for the reader to note that, because the focus of this book is on assessment for the purpose of understanding a client's presenting

condition and the etiological factors that contribute to that presentation, there is little focus on psychological measures that have been specifically validated for the purposes of case conceptualization in treatment planning. Certainly, once an assessor has conducted a valid assessment for understanding the etiological factors relevant to the presenting concern (and has potentially reached a diagnosis), and who has determined that psychotherapy might be indicated for the client, the assessor might administer additional psychological measures specifically developed and validated for the purposes of case conceptualization/treatment planning. Those measures typically place the client's symptom complex into a particular therapeutic orientation and/or are used for following a client's progress through therapy. However, measures of case conceptualization and treatment outcome are not necessarily valid measures for the purposes of initial assessment and thus are beyond the purposes of the present text. For further information on empirically validated measures specific to these clinical purposes, readers are referred to recently published materials that provide excellent summaries of such measures (e.g., Antony & Barlow, 2010; Hunsley & Mash, 2008b).

A Focus on Assessment That Does Not Always Lead to Diagnosis

When one wears the lens that sees the only goal of assessment as one of confirming (or disconfirming) a particular diagnosis, that lens may be biased in that it can lead the assessor to the wrong conclusion, due to faulty information seeking and decision making. For example, consider the following case: A female in her early 30s was referred for treatment of her anxiety disorders. She had been diagnosed with social anxiety and generalized anxiety disorder by another psychologist, who administered several self-report questionnaires focused on DSM-IV symptoms of both disorders, as well as a structured diagnostic interview. However, upon meeting the client, it was clear that the other psychologist had merely asked the client whether she had any medical disorders (with the limited "exclusionary" questions in the structured interview), rather than fully considering the possible contribution of medical or physical conditions to her presentation. The client's appearance (bulging eyes) and other symptoms that she reported upon questioning (changes in menstrual cycle, issues with her skin) led the second psychologist to refer the client to a physician for further evaluation, and the client was eventually diagnosed with Graves' disease, which is known to include symptoms of anxiety, irritability, sleep problems, rapid heart rate, tremor and sweating, all of which at first glance (and with shallow focus only

on descriptive symptomatology) would have been consistent with a number of anxiety disorder diagnoses. Had the second assessor focused only on the referral question, only asked questions about symptoms, and given only cursory attention to possible medical conditions by merely asking about previous medical diagnoses, the client would have been harmed: The etiological factor that was the primary cause of her "anxiety" symptoms would not have been identified, and she would have received unnecessary psychotherapy for symptoms that were entirely related to her medical condition.

Unfortunately, in a world in which "informed" clients present for evaluation insisting that they "know" what their diagnosis is, and where there are potential biases (e.g., compensation for services) for an assessor to "find" a diagnosis, this may be the most common biased lens that psychologists (and other mental health professionals) wear. The overfocus on a need to identify a specific diagnosis can bias the assessment from the moment it begins, including the referral question (e.g., "Please assess for depression") or the first comment the client makes in the first session (e.g., "I think I have ADHD"). Again, one main goal of this text is to emphasize that assessment should be problem-focused and not diagnosis-focused, should go beyond psychological diagnosis, and in fact may not lead to a psychological diagnosis. As Exner and Erdberg (2002) emphasized, "psychodiagnosis" is much more than simply placing a diagnostic label on a person. It is a multitest procedure to examine and assess the person as a unique entity, including all of his or her strengths and weaknesses as well as the person's awareness and insight into his or her presenting problems, the developmental nature of the presentation, and the potential etiological contributions to all of the above—all of which may influence treatment goals or approach. Two people with same psychological diagnosis are still two unique people in many other respects and actually are often still quite unique in their overall symptom pattern (and thus in their treatment needs).

Unfortunately, many factors lead to a restricted focus on assessment for diagnosis only, including a bias toward the assumption that quick screening and immediate decisions are equivalent to a comprehensive assessment. Assessment occurs in diverse contexts, and a scientifically minded assessor recognizes the differences between screening evaluations and more comprehensive assessment approaches that allow for integration across disparate sources of assessment data and use of instruments that are more accurate and less likely to result in false-positive diagnoses. Such differences are considered further in Chapters 6, 9, 11, and 12. A bias toward assessment as a diagnostic-only tool also arises from biases in our culture and in reimbursement systems for diagnosing conditions to reinforce "finding" a reimbursable label for clients. This issue is discussed further in

Chapter 2. However, a bias toward assessment as serving only a diagnostic function can also occur because early training in assessment often focuses only on specific tests for specific diagnoses and specific methods to reach a diagnosis.

The goal of this text is to provide some correction for this overall bias by providing additional information on the scientific foundation for the entire assessment process beyond just diagnosis. On the other hand, sometimes diagnosis is highly appropriate; the goal of this text is not to bias assessors against using what can be an important communication tool (if done correctly). Instead this text presents a balanced viewpoint on the relationship of diagnosis to the process of assessment. To minimize a diagnostic bias, assessors should remember that assessment should focus on the person and his or her problems in their full developmental and biopsychosocial context.

AN EMPHASIS ON ASSESSMENT AS A THERAPEUTIC PROCESS

There are some psychologists (and other mental health professionals) who believe that doing any sort of assessment prior to beginning therapy will "bias" them in some way in their treatment of the client. However, such sentiments seem to be mostly aimed against the idea of using standardized testing instruments that are focused on reaching a diagnosis. Although I share those concerns about the overfocus on diagnoses only in assessment, I also caution clinicians against "throwing the baby out with the bathwater" and assuming there is no value to assessment prior to treatment. Such a viewpoint does not acknowledge that (1) in order to correctly treat a person, you have to know "what is wrong"; and (2) talking with a person and making behavioral observations about him or her during the course of therapy *is* assessment (albeit limited). Individuals with this belief also do not recognize the biased lens of their therapeutic orientation, which can lead to bad decision making, because it will focus their attention on only certain aspects of a client's presentation and cause them to ignore other aspects that may be important to fully understanding the client's situation (see Chapters 2 and 3).

As Exner and Erdberg (2002) pointed out, assuming that relevant assessment information will "emerge" during therapy means a much slower and less validated approach to data gathering. "No one would go into surgery or begin some other form of medical intervention without first being assured that the relevant tests had been completed and that the attending physician had a good understanding of all the issues and treatment alternatives" (Exner & Erdberg, 2002, pp. 11–12). Clinicians who fail to conduct

adequate assessments prior to beginning therapy are potentially practicing in an unethical manner, by not basing their decision making on adequate evidentiary data to support their conclusion (American Psychological Association, 2010; Butcher, 2002). Furthermore, because results of assessment often lead to consequences for the individual being assessed, assessment in itself can be viewed as an intervention.

Assessment is necessary to treatment, regardless of diagnosis. Although diagnosis will certainly influence treatment decisions, an assessor needs to consider assessment data beyond any diagnosis to make effective treatment decisions. Even within medicine, the idea that specific symptoms dictate specific treatment is oversimplified and leads to poor assessment. For example, whether a pattern of sinus symptoms is due to viral or bacterial infection is vital information toward determining the treatment for the same symptom complex. Similarly, in the case of the person with "anxiety," above, her symptom picture met DSM-IV symptom criteria for two different anxiety disorders, yet neither would be addressed successfully by psychotherapy, even if empirically supported treatments for anxiety had been provided, because the major etiological contribution to her symptom pattern was neuroendocrine in nature. Even when a psychological disorder *is* present, data such as past and present contributing biopsychosocial factors, levels of current impairment/dysfunction, and presence/absence of inter- or intrapersonal supports and strengths may influence treatment decisions. Assessors should remember that assessment should focus on the person in his or her context and should ultimately be therapeutic, even if the final "diagnosis" (or lack thereof) is not the answer the person seeks. Literature on therapeutic assessment is presented in Chapter 14 to support the contention that an assessor should wear the lens of therapeutic assessment from the moment the case begins, not just at the point of feedback.

The Use of Case Examples

Although the text presents case examples from my (or my colleagues') clinical experience as a way to illustrate key issues in an empirically based approach to assessment, they have often been changed in ways not germane to the main clinical issue but to de-identify the individuals described. In some instances, the cases are prototypical examples merged across several similar clients to represent the critical issue at hand. Furthermore, although quotes from clients are included, they have been slightly paraphrased in ways that remain true to what was said but to further protect against identification.

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