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INTRODUCTION

It is difficult to understand the universe if you only study one planet.
—Miyamoto Musashi

Clinical neuropsychologists are well versed in the technical, rote processes of conducting a neuropsychological evaluation. However, neuropsychology is not simply reporting test scores. To be a good neuropsychologist, one must first be a good psychologist, part of which entails making context-dependent clinical judgments. Understanding a client's background is imperative for collecting accurate data and interpreting it to make useful recommendations. This can be challenging with any client, but especially so with a client from a cultural background different from that of the neuropsychologist.

The following example illustrates a scenario that a neuropsychologist might encounter when evaluating a culturally different client (CDC). Maria is a 34-year-old Mexican American woman who sustained a seizure of unknown origin while riding the bus on her way home from her job as a seamstress. She was referred to Dr. Neil for neuropsychological testing to clear her for return to work. Maria is highly motivated to return to work

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because she has three children to support. She does not speak English well and has only a second-grade education; thus, testing was conducted through an interpreter. Maria failed two of four performance validity tests and scored in the impaired range for almost all tests, including attention, visuospatial skills, processing speed, and memory. Inconsistent with her test performance was her self-report of catching the bus to the office, which entailed transferring twice and walking several blocks without the aid of a GPS. She also does all the grocery shopping for the family and was reported to be one of the best workers at her company. Dr. Neil was certain that there were cultural, language, and educational factors affecting testing; however, on the basis of her test results, he could not determine if her seizure disorder significantly impacted her cognitive functioning.

Although a neuropsychologist's primary concern may be with English-language proficiency, many other elements of a CDC's personal history play important parts in an effective neuropsychological evaluation. Language comprehension is just one piece of a very complex puzzle. The neuropsychologist must develop a more detailed understanding of the client's educational background, cultural values, communication style, comfort with the testing process, and conception of intelligence, which may not conform with Western conceptualizations of those issues. Without knowledge of these and other important cultural factors, the neuropsychologist risks using tests that are not validated for the client's culture and country of origin, interpreting results incorrectly, and making improper diagnoses and recommendations that could cause the client distress or harm.

Thus, the goal of this book is to provide clinical neuropsychologists with a broad framework for conducting culturally informed neuropsychological evaluations. However, this is not a step-by-step manual that provides "answers" or specifics for working with a client from a given cultural background. Instead, my intent with this book was to help clinical neuropsychologists understand and identify their potentially biased perceptions of CDCs and minimize biased assessment methodologies through careful preparation. Preparation is the most important aspect of a culturally informed neuropsychological evaluation. The book provides a detailed description of this process by familiarizing the reader with the disparate literature on cultural characteristics that can affect a neuropsychological assessment. These elements are then organized into a systematic approach for evaluating a CDC. Although it is imperfect, I hope that the framework introduced in this book will point neuropsychologists of all cultures in the right direction toward more culturally informed neuropsychological assessments. The clinician can then find his or her own answers to challenges associated with specific CDCs.

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OVERVIEW OF CLINICAL NEUROPSYCHOLOGY AND CROSS-CULTURAL NEUROPSYCHOLOGY

Clinical neuropsychology is the subspecialty of clinical psychology that focuses on the evaluation of brain functioning and associated cognitive, behavioral, and emotional sequelae of neurological disorders; the goals of neuropsychological assessment include diagnosis, reaching data-driven opinions of functionality and treatment, and gaining a basic understanding of brain–behavior relationships. As with clinical psychology, neuropsychology was developed in Western countries with both quantitative and qualitative approaches to assessment. Thus, there is a strong Western bias in assessment techniques. The quantitative tradition emphasizes assessment through psychometrically sound tests in which performances are interpreted in relation to the distribution of scores in a given sample or population. Proponents of this approach include Ward Halstead, Ralph Reitan, and Arthur Benton. Qualitative approaches, espoused by Norman Geshwind, Edith Kaplan, and Russian Alexander Luria, are more dynamic and use hypothesis testing to determine the processes that underlie complex behaviors. Contemporary neuropsychological approaches can be conceived as a hybrid of both traditions, with the majority of clinicians using a flexible battery of validated tests for different neurological conditions (Sweet, Meyer, Nelson, & Moberg, 2011).

Cross-cultural neuropsychology is the assessment of cognitive functioning and the examination of brain–behavior relationships across people of different cultures or ethnicities. One of the earliest cross-cultural neuropsychological studies was conducted by Luria (1979) in the 1930s, when he examined the impact of culture and education on the cognition of Uzbekistan villagers undergoing accelerated social change secondary to government efforts for modernization. However, the importance of cultural issues in neuropsychological assessment has really gained traction only within the past 20 years. A number of clinical and scientific factors have contributed to this growing interest.

In the United States, the growing ethnic diversity of the population, culminating in projections of ethnic minorities overtaking White Americans as the majority population around 2044 (Colby & Ortman, 2015), and the 2001 U.S. Surgeon General's Report (Satcher, 2001) on mental health disparities between Whites and ethnic minority populations, have been instrumental forces for incorporating culturally fair psychological assessments in health care services.

Internationally, the growing affluence of countries with developing economies has resulted in better access to Western-influenced health care and mental health services; increased access to information via the Internet, Western training, and other electronic data sources; and growing public

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health concerns, such as aging populations. These factors have contributed to the development of neuropsychology across the globe (Fujii, 2011). In addition, many researchers have studied the neuropsychological functioning of people living in a range of countries to better understand how experiences and behaviors affect brain–behavior relationships (Agranovich & Puente, 2007) and the impact of diseases, such as malaria, on brain functioning (Boivin & Giordani, 2013).

The growth of cross-cultural neuropsychology is reflected in expanding neuropsychological literature. including contributions of non-Western researchers in academic journals (Matsuoka, Uno, Kasai, Koyama, & Kim, 2006; Senanarong et al., 2005; Yang et al., 2012), the publication of cross-cultural neuropsychology books (Fletcher-Janzen, Strickland, & Reynolds, 2000; Fujii, 2011; Nell, 2000; Uzzell, Ponton, & Ardila, 2007), coverage of cultural issues in newer editions of classic texts (Lezak, Howieson, Bigler, & Tranel, 2012; Strauss, Sherman, & Spreen, 2006), cultural chapters in neuropsychology books (Artiola i Fortuny, 2008), and association guidelines for addressing multicultural issues in assessment (American Psychological Association [APA], 2003; American Academy of Clinical Neuropsychology [AACN] Board of Directors, 2007), as well as growth in international membership in the International Neuropsychological Society.

Numerous clinicians and researchers have identified and addressed specific issues pertinent for using Western neuropsychological tests with CDCs, including test validity (Mungas, Reed, Farias, & DeCarli, 2005), English as a second language (Artiola i Fortuny, 2008), acculturation (Greenfield, 1997), conception of intelligence (Sternberg et al., 2001), test translations (International Test Commission, 2010), bilingualism (Rivera-Mindt et al., 2008), illiteracy and low education level (Ardila et al., 2010), quality of education (Manly, Jacobs, Touradji, Small, & Stern, 2002), novelty of task (Nell, 2000), cultural and demographic variables (Judd & Beggs, 2005), perceived meaning of testing situation (Ardila, 2007), heterogeneity within a race (Fujii, 2011), selection biases in immigration for country of origin (Fujii, 2011), race norms (Heaton, Miller, Taylor, & Grant, 2004), effort testing (Salazar, Lu, Wen, & Boone, 2007), and test development and adaptation (Y. H. Chen & Chen, 2002; Ostrosky-Solís, Ardila, & Rosselli, 1997).

OVERVIEW OF THE BOOK

Despite an emerging cross-cultural neuropsychological literature, thus far there has not been a comprehensive integrated resource that describes how to conduct a neuropsychological evaluation with a CDC. This is the goal of the present book: the application of multiculturalism to neuropsychology

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via practical guidelines to produce a culturally informed evaluation. It should be emphasized that the goal is not a "culturally fair" or even a "culturally neutral" evaluation because most neuropsychological assessments are grounded in Western culture and values and based on adaptations, translations, or indigenous emulations of Western technology. Thus, it is argued that neuropsychological assessments would hold different levels of inherent biases to the spectrum of CDCs. Moreover, given my background, the process described in this book is inherently "United States–centric."

Although the primary audience for this book is clinical neuropsychologists, given the importance and ubiquity of the topic, the content would be of interest to any psychologist or psychology trainee who performs cognitive psychological assessments or works with CDCs.

The book is divided into three parts. Part I is foundational and focuses on the clinician's attitude and perspective. I argue that before learning how to conduct a culturally informed neuropsychological evaluation, the neuropsychologist must have a respectful, open-minded attitude toward the CDC and an appreciation of how culture affects the neuropsychological process. Without these cornerstones, the neuropsychologist's conduct, conceptualizations, and conclusions may be clouded with biases and a lack of respect and appreciation of the client's culture. Chapter 1 thus describes how an ethnorelative perspective is a prerequisite for a culturally informed neuropsychological evaluation. First, it introduces Bennett's developmental model of intercultural sensitivity (1993) and illustrates how assessment biases can result from a clinician's stage of cultural awareness. Categories of behaviors and values are then introduced to assist the clinician in developing an awareness of assumptions in his or her own culture and thereby allow for comparison and contrast with a CDC's culture. In this regard, it provides categorical tools for meeting APA's (2010) Ethical Principles of Psychologists and Code of Conduct, hereafter referred to as the APA Ethics Code, and Revised Competency Benchmarks for Professional Psychology (APA, 2011) for working with CDCs.

Chapter 2 provides an overview of how culture affects the neuropsychological process based on a summary of APA's (2010) Ethics Code and Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists (APA, 2003) and the AACN Practice Guidelines concerning Underserved Populations/Cultural Issues, as well as American Educational Research Association (AERA) 2014 standards for fairness in testing. A "big-picture" conceptualization of how culture specifically affects the neuropsychological assessment process is then introduced. Together, these principles guide the culturally informed neuropsychological process.

Part II provides an overview of the preparation a neuropsychologist must undertake before conducting a neuropsychological evaluation. Chapter 3

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describes how to create a context for understanding a CDC through three preparatory tasks: (a) contextualizing behaviors and presentation, (b) maximizing cooperation during testing, and (c) facilitating communication. The chapter uses a comprehensive review of Native Indian and Alaskan Native cultures to illustrate the importance of societal structures, religious beliefs, family structures, concepts of intelligence, beliefs about illness, and other cultural factors that will have an impact on the neuropsychologist's hypothesis development and test selection. Chapter 4 distills the inherent goals of the evaluation; breaks down components of moderating factors, including acculturation and communication/language, to identify potential threats to validity; and offers strategies for addressing these threats, working with interpreters, and interpreting test results, the latter to meet International Test Commission recommendations. Chapter 5 introduces strategies and formulas for estimating CDCs' premorbid functioning in general and on Western neuropsychological tests. In that chapter, I argue that intelligence testing and estimating premorbid IQ give neuropsychologists a general understanding of how well a CDC has acculturated to Western norms, thus providing a benchmark to predict and interpret test scores. Chapter 6 describes psychometric considerations for test selection and recommendations for test translation. It then identifies specific approaches recommended by the AACN for data collection helping neuropsychologists determine which strategies may be most appropriate for a particular CDC. Chapter 7 follows up this discussion and closes Part II with a list of neuropsychological tests that have demonstrated cross-cultural validity along with references for validation studies describing norms from different countries.

Part III demonstrates how all this preparation is put into action through a comprehensive case sample[1] of Jae Song Kim, a 66-year-old Korean American man who sustained a right-sided basal ganglia stroke. This case runs through the final three chapters and illustrates what a culturally informed neuropsychological process entails in actual practice. The case is introduced in Chapter 8 and exemplifies the process of developing a cultural context with a specific client, demonstrating how knowledge about a client's cultural background and values can inform the evaluation process. It also illustrates methods for overcoming common challenges when working with a CDC. The chapter closes with the neuropsychologist interviewing Mr. Kim and his family with the aid of an interpreter, showing how this can be valuable in developing a context and aligning the neuropsychologist's goals with those of the CDC and the CDC's family. Chapter 9 breaks down the process for interpreting interview and test data and integrating them into a coherent case formulation.

[1]All case examples are composites, and proper steps were taken to maintain the confidentiality of the individuals in these examples.

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The case example follows the five essential steps of this process: (a) scoring tests with appropriate norms, (b) identifying potential threats to validity, (c) determining effort through performance validity tests, (d) reviewing the pertinent neuropsychological literature, and (e) interpreting the data. Chapter 10 provides guidelines for writing a report, which is illustrated by a full case report for Mr. Kim. It also details how to conduct a feedback session with a CDC and his or her family. Mr. Kim's session demonstrates how careful preparation and developing a context result in culturally useful treatment recommendations that promote positive outcomes for the CDC.