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State of Washington,

v.

Phiengchai Sisouvanh,

Respondent,

Appellant.

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STATE OF WASHINGTON

BRIEF OF *AMICI CURIAE*

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I. STATEMENT OF INTEREST

The Fred T. Korematsu Center for Law and Equality (“Korematsu Center”) is a non-profit organization based at Seattle University School of Law that works to advance justice through research, advocacy, and education. It has a special interest in promoting fairness in the courts of our country. The Korematsu Center does not, in this brief or otherwise, represent the official views of Seattle University.

OneAmerica was formed directly after September 11, 2001, in response to the hate crimes and discrimination against immigrant communities. Its mission is to advance the fundamental principles of democracy, justice, and human rights at the local, state and national levels. OneAmerica works with community partners to protect and strengthen fundamental American rights for all people, especially immigrants.

Northwest Immigrant Rights Project (“NWIRP”) is the only nonprofit organization providing comprehensive immigration legal services to low-income individuals and families in Washington State, and serves over 9,000 individuals annually. NWIRP, which also advocates on behalf on immigrant and refugee communities, has a deep interest in the subject of this litigation because adjudications in the criminal justice system have a significant impact on decisions made in the immigration context.

Asian Counseling & Referral Service (“ACRS”) is a leading 501(c)(3) nonprofit organization founded in 1973 to provide culturally

competent and linguistically accessible services for the Asian Pacific American community, including immigrants, refugees, and American-born. ACRS serves approximately 23,000 clients annually in over 30 dialects and languages with a wide array of behavioral health and human services. ACRS provides nationally recognized mental health services to approximately 2,000 clients a year. ACRS is convinced of the need for culturally competent mental health evaluations to ensure a fair and accurate assessment and equal access to justice for defendants of all cultures and races.

One of the primary missions of the Korean American Bar Association of Washington (“KABA”) is to serve the community it represents, including in advocating for the rights of persons with limited means or access to justice.

The Middle Eastern Legal Association of Washington (“MELAW”) is a non-profit legal organization for attorneys and law students of Middle Eastern descent, along with their friends and supporters. MELAW seeks to advance the goals of its members, provide a legal voice for the Middle Eastern community in Washington, and address and educate the public on legal and political issues facing Middle Easterners. MELAW has a special interest in advancing the cultural competency and fairness of Washington courts.

Dr. Daryl Fujii is a clinical neuropsychologist with expertise in the neuropsychology of Asian Americans. Dr. Fujii edited the first comprehensive resource for assisting neuropsychologists in providing

culturally competent services to Asian Americans, and actively promotes cultural competence within his profession.

Detailed statements of interest are contained in the accompanying motion for leave to file this amicus brief.

II. INTRODUCTION

The issue before the Court involves the fundamental right of every person in our state, regardless of race, culture, or national origin, to enjoy fair treatment by, and equal access to, our justice system. Due process prohibits the trial or conviction of an incompetent criminal defendant. When competency to stand trial is at issue, court-appointed mental health professionals are called on to evaluate the competency of the defendant, acting as Constitutional gatekeepers who help to determine in the first instance whether an individual may face criminal jeopardy in our courts. This critical gatekeeping function — the evaluation of a defendant’s competence to stand trial — must be performed in a culturally competent manner. If it is not, a defendant is deprived of an accurate evaluation and thus denied fair treatment under the law and access to a fair proceeding.

This Court has long recognized that an understanding of the ethnic and cultural diversity of the state’s population is essential if equal justice for all is to be realized. In 1990, the Court ordered the creation of a Minority and Justice Commission to “examine all levels of the State judicial system to ensure that judicial needs of people of color are considered and to make recommendations for judicial improvement.” Wash. State Sup. Ct. Order No. 25700-A-466 (Oct. 4, 1990), at 1. The

Court has since renewed the Commission four times, most recently observing that “for any system of justice to be responsible, it must be examined continuously to ensure it is meeting the needs of all persons who constitute the diverse populations we serve, with particular concern for the needs of persons of various racial, ethnic, cultural and language groups.” Wash. State Sup. Ct. Order No. 25700-B-508 (Sept. 8, 2010), at 1. Accordingly, among the goals of the Minority and Justice Commission created by the Court is “improve[ment of] the cultural and professional competence of judges, court employees and other representatives of the Washington State Justice System.”¹

We live in a deeply and inherently multicultural society. Cultural competence is necessary to ensure not just dignity and respect, but inclusion and fair treatment for all people. This is clearly true in medicine and in mental health, fields where it has been recognized that successful outcomes depend on culturally sensitive practices. Yet despite this broad modern recognition and understanding of the importance of cultural issues in working with persons of diverse backgrounds, the State’s position here seems to be that cultural competence is irrelevant to whether an individual may be tried and convicted as a criminal in a Washington court.

We draw from the fields of medicine and mental health to offer an evidence-based approach to understanding the essential role of cultural

¹ Washington Courts: Minority and Justice Commission, *available at* http://www.courts.wa.gov/committee/?fa=committee.home&committee_id=84 (last visited Apr. 10, 2012).

competence in ensuring that minorities and immigrants have equal access to these fundamental societal services. The evidence demonstrates the existence of substantial disparities in the physical and mental health of diverse individuals. Professionals in these fields have recognized that failure to account for culture has significantly contributed to these disparities, and have furthermore espoused cultural competence as a core part of the solution. Amici urge the Court to establish unequivocally that a person's competence to be tried as a criminal in a Washington court must be determined in the context of, and with a qualified understanding of, that person's cultural background.

III. STATEMENT OF THE CASE

Ms. Sisouvanh, a lowland Lao national, arrived in the United States in 1991, having spent the first few years of her life in the Thai refugee camp where she was born. In 2008, when she was 23 years old, Ms. Sisouvanh was charged with the murder of a pregnant woman (the nearly full-term child survived). Ms. Sisouvanh was found competent to stand trial by a psychologist with no knowledge or understanding of her Lao cultural background, religion, or refugee experience, and who assumed that she had led "a pretty average American life." 3-12-10 RP 29:13-14. Ms. Sisouvanh was found guilty and sentenced to life imprisonment without parole.

IV. ARGUMENT

There is no dispute that the due process clause of the Fourteenth Amendment prohibits the trial or conviction of a criminal defendant while

that individual lacks competence to stand trial. *Drope v. Missouri*, 420 U.S. 162, 171–72, 95 S. Ct. 896, 43 L. Ed. 2d 103 (1975); *In re Pers. Restraint of Fleming*, 142 Wn.2d 853, 861, 16 P.3d 610 (2001). Nor is there any dispute that due process is also denied if procedures adequate to protect this right are not observed. *State v. Heddrick*, 166 Wn.2d 898, 903–04, 215 P.3d 201 (2009). Accordingly, the procedures established in Washington to determine the competency of a criminal defendant — as set forth in Chapter 10.77 of the Revised Code of Washington — “are mandatory and not merely directory.” *Id.* at 904. These procedures explicitly require that the mental condition of a defendant whose competency is reasonably in doubt be evaluated by “*qualified* experts or professional persons.” RCW 10.77.060(1)(a) (emphasis added).

The crux of the parties’ dispute here is what it means for the expert or professional person conducting a competency evaluation to be “qualified.” Based on principles of statutory interpretation, Ms. Sisouvanh argues that such an individual cannot be qualified unless culturally competent. (Brief of Appellant at 14–34.) The State’s sole argument in response presents a tautology, namely, that an expert or professional person conducting a competency evaluation satisfies the statutory requirement merely by being qualified to perform a competency (or “forensic”) evaluation. (Brief of Respondent at 17–18.) Although the legal arguments regarding the meaning of “qualified” are beyond the scope of this brief, amici — as organizations dedicated to promoting the legal rights of minorities and immigrants — are uniquely suited to

comment on the damage that failure to require cultural competence inflicts on these communities.

A. The Fair Provision of Services to an Increasingly Diverse Society Requires Cultural Competence.

The United States is a multicultural society. More than a quarter of the nation's population self-identifies as being of a race other than "white."² More than 39 million individuals living in the United States are foreign-born.³ In 2010 alone, more than 1.7 million individuals became naturalized citizens or legal permanent residents of, or were granted refugee status or asylum in, the United States.⁴ Washington has experienced the same demographic trends as the nation as a whole. Non-white individuals make up approximately 22.7 percent of the state's population. Nearly 900,000 foreign-born individuals — 12.7 percent of the state's population — reside here in Washington. More than 17 percent

² U.S. Census Bureau, State & County Quick Facts: USA QuickFacts, *available at* <http://quickfacts.census.gov/qfd/states/00000.html> (last visited Apr. 2, 2012).

³ *Id.*; *see also* U.S. Census Bureau, Selected Social Characteristics in the United States: 2010 American Community Survey 1-Year Estimates, *available at* http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_1YR_DP02&prodType=table (default geography = United States) (last visited Apr. 2, 2012).

⁴ Office of Immigration Statistics, Dep't of Homeland Security, 2010 Yearbook of Immigration Statistics, Tables 3, 14, 17, and 21, *available at* http://www.dhs.gov/xlibrary/assets/statistics/yearbook/2010/ois_yb_2010.pdf (last visited Apr. 2, 2012). These statistics do not even include the number of foreign nationals residing in the United States without authorization, estimated as being 10.8 million as of January 2010. Michael Hoefler et al., Dep't of Homeland Security, Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2010, *available at* http://www.dhs.gov/xlibrary/assets/statistics/publications/ois_ill_pe_2010.pdf (last visited Apr. 2, 2012).

of those living in Washington speak a language other than English at home.⁵

Our societal institutions have realized that, to effectively serve these minority and immigrant groups, they must understand the ethnic and cultural diversity of these groups and how it impacts the provision of services. As recognized by professionals in the fields of medicine and mental health, cultural competence is not a mere luxury, not a mere sign of respect, but a necessity to avoid unfair outcomes for minorities and immigrants — in this case, life imprisonment without the possibility of parole.

1. Cultural Competence Enables Professionals to Work Effectively with Individuals from Different Cultures.

As defined by a pioneering and widely cited publication in this field:

Cultural competence is a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enable that system, agency, or those professionals to work effectively in cross-cultural situations. The word “culture” is used because it implies the integrated pattern of human behavior that includes thoughts, communications, actions, customs, beliefs, values, and institutions of a racial, ethnic, religious, or social group. The word competence is used because it implies having the capacity to function effectively. A culturally competent system of care acknowledges and incorporates — at all levels — the importance of culture, the assessment of cross-cultural relations, vigilance towards the dynamics that result from cultural differences, the

⁵ U.S. Census Bureau, State & County Quick Facts: USA QuickFacts (Washington), available at <http://quickfacts.census.gov/qfd/states/53000.html> (last visited Apr. 2, 2012).

expansion of cultural knowledge, and the adaptation of services to meet culturally-unique needs.⁶

Cultural competence, therefore, requires more than merely embracing diversity and inclusion — it requires the attitudes, skills, knowledge, and behaviors necessary to recognize, understand, and react properly to cultural issues and differences.

2. Cultural Competence in Medicine Ensures that Members of Diverse Communities Have Meaningful Access to Effective Healthcare.

The medical field has recognized the importance of cultural competence to ensure that diverse communities have meaningful access to effective healthcare. It has been well-established that racial and ethnic minorities generally receive lower levels of healthcare and experience higher rates of certain conditions and diseases than white individuals.⁷

⁶ Terry L. Cross, et al., *Towards a Culturally Competent System of Care: A Monograph on Effective Services for Minority Children Who Are Severely Emotionally Disturbed 13 (1989)*, available at <http://www.eric.ed.gov/PDFS/ED330171.pdf> (last visited Apr. 2, 2012). This definition has been adopted, for example, by the Washington State Department of Health, as well as by various minority groups in Washington advocating for cultural competence in addressing the achievement gap in education. Washington State Dep't of Health, *Cultural Competency in Health Services and Care: A Guide for Health Care Providers 6 (2010)*, available at <http://www.doh.wa.gov/hsqa/professions/Publications/documents/CulturalComp.pdf> (last visited Apr. 2, 2012); Washington State Multi-Ethnic Think Tank, *Call to Action: Mandating an Equitable and Culturally Competent Education for All Students in Washington State 11 (2002)*, available at <http://www.wce.wvu.edu/Resources/CEP/METT/2006/Multi%20Ethnic%20Think%20Tank%20Position%20Paper.pdf> (last visited Apr. 2, 2012).

⁷ For example, the rate of infant mortality among Native Americans and African Americans is twice as high as for white babies. More than half of the hepatitis B sufferers nationwide are Asian Americans and Pacific Islanders. Mortality rates from coronary heart disease are significantly higher for American Indians and African Americans than for whites. *See, e.g.*, Governor's Interagency Council on Health Disparities, *State Policy Action Plan to Eliminate Health Disparities 6 (2010)*, available at <http://healthequity.wa.gov/about/docs/ActionPlan.pdf> (last visited Apr. 2, 2012); Washington State Dep't of Health, *Cultural Competency in Health Services and Care: A Guide for Health Care Providers*, *supra* note 6, at 5.

The crisis is such that the Legislature has created the Governor's Interagency Council on Health Disparities to develop by 2012 an action plan and statewide policy to address health disparities. RCW 43.20.270.

While factors such as genetics and socioeconomic status contribute to health disparities, culture also strongly influences the success of medical intervention in several ways.⁸ As observed by the Legislature:

[W]omen and people of color experience significant disparities from men and the general population in education, employment, healthful living conditions, access to health care, and other social determinants of health. . . . [T]hese circumstances coupled with lower, slower, and *less culturally appropriate* and gender appropriate access to needed medical care result in higher rates of morbidity and mortality for women and persons of color than observed in the general population.

RCW 43.20.270 (emphasis added). For example: Culture influences how an individual perceives a given disease and its possible causes and cures, which may in turn influence how that individual perceives the likely relative efficacy of a traditional healing approach versus Western medicine, and whether that individual will follow through on a physician's prescribed course of treatment. Culture influences an individual's general willingness to seek assistance, and how early or late in the progression of a disease an individual will seek medical intervention. Culture influences how an individual communicates with a physician, not least because of differences in linguistic and non-verbal communication patterns. The

⁸ See, e.g., National Center for Cultural Competence, Policy Brief 1: Rationale for Cultural Competence in Primary Care 1 (2003), available at http://nccc.georgetown.edu/documents/Policy_Brief_1_2003.pdf (last visited Apr. 2, 2012); Washington State Dep't of Health, Cultural Competency in Health Services and Care: A Guide for Health Care Providers, *supra* note 6, at 8.

efficacy of public health campaigns may be lower among racial and ethnic minorities, particularly if not culturally appropriate.⁹

Recognizing the roles that culture plays in creating health disparities, the Legislature has declared it “a priority for the state to develop the knowledge, attitudes, and practice skills of health professionals and those working with diverse populations to achieve a greater understanding of the relationship between culture and health.” RCW 43.70.615, note. In addition to creating the Governor’s Interagency Council on Health Disparities, the Legislature has also tasked the Department of Health with creating an “ongoing multicultural health awareness and education program as an integral part of its health professions regulation.” RCW 43.70.615(2). The Department of Health has in turn committed “to creating health equity” as well as “promoting cultural competency among health care providers.”¹⁰

3. Cultural Competence in Mental Health Is Necessary for the Correct Evaluation, Diagnosis, and Treatment of Patients.

For many of the same reasons applicable to medicine generally, the important role of culture is widely recognized in clinical psychology and psychiatry. Cultural issues play an even more prominent role in these professions, however, because of the highly individualized nature of

⁹ See, e.g., Linda Villarosa, *Tailoring a Healthy Message to Blacks*, N.Y. Times, Aug. 18, 1998, available at <http://www.nytimes.com/1998/08/18/science/tailoring-a-healthy-message-to-blacks.html?pagewanted=all&src=pm> (last visited Apr. 2, 2012).

¹⁰ Washington State Department of Health, *Cultural Competency in Health Services and Care: A Guide for Health Care Providers*, *supra* note 6, at 2.

evaluation, diagnosis, and treatment necessary for the preservation or achievement of mental health.

First, knowledge and appreciation of cultural cues is vital for establishing patient rapport. In the absence of cultural competence, a mental health professional lacks knowledge as to how a particular patient is best approached to establish the trust necessary for open, honest, and comprehensive communication. In the absence of such communication, a mental health professional cannot gather the information needed to accurately assess and evaluate the patient. Second, cultural competence is critical if a mental health professional is to accurately interpret a particular patient's behavior and communication. Third, a mental health professional lacking cultural competence will fail to recognize culturally specific manifestations of mental health conditions such as depression or schizophrenia, or disorders that have no equivalent in Western society.¹¹ Conversely, such a professional may incorrectly interpret behaviors normal to a particular culture as evidence of psychological distress.

For example, lack of familiarity with Asian cultures may pose challenges such as the following:

- Due to their reservedness, building rapport with individuals from certain Asian cultures may require more time and effort than with non-minority American patients. For Laotians, rapport may be built by encouraging the individual to provide a detailed account of his or her life.¹² On the other hand, many Vietnamese patients are

¹¹ Daniel Goleman, *Making Room on the Couch for Culture*, N.Y. Times, Dec. 5, 1995, available at <http://www.nytimes.com/1995/12/05/science/making-room-on-the-couch-for-culture.html?pagewanted=all&src=pm> (last visited Apr. 2, 2012).

¹² Appendix C at 160 (Daryl Fujii, *Neuropsychology of Laotian Americans*, in *The Neuropsychology of Asian Americans* (Daryl E.M. Fujii ed., 2010)).

uncomfortable providing personal information before a trusting relationship is established, thus making medical (as opposed to personal) questions more appropriate for an initial visit.¹³

- Individuals from Southeast Asian countries, such as Vietnam, may say “yes” to indicate merely that they have heard their interlocutor’s question or statement — *not* to indicate agreement.¹⁴
- Certain Asian cultures stress conformity or deference to authority, as a result of which individuals from these cultures may find it difficult to express lack of understanding of, let alone outright disagreement with, their social or professional superiors, including professionals in the medical and mental health fields.¹⁵

As these three basic examples demonstrate, lack of cultural competence can easily interfere with the effective communication so critical within the mental health professions for proper diagnosis and treatment.

Accordingly, professional groups within the mental health fields have established standards and guidelines that recognize the importance of cultural competence. Of particular relevance, the American Psychological Association (“APA”) requires psychologists to either obtain the requisite “training, experience, consultation, or supervision necessary to ensure the competence of their services” — or refer the patient to another professional — where “an understanding of factors associated with age, gender, gender identity, race, ethnicity, culture, national origin, religion,

¹³ Appendix D at 192–93 (Dung Ngo, Minh-Thu Le & Phuoc Dinh Le, *Neuropsychology of Vietnamese Americans*, in *The Neuropsychology of Asian Americans* (Daryl E.M. Fujii ed., 2010)).

¹⁴ *Id.* at 193.

¹⁵ See, e.g., Appendix A at 1, 2–3, 6 (Daryl Fujii, *Introduction*, in *The Neuropsychology of Asian Americans* (Daryl E.M. Fujii ed., 2010)); Appendix D at 193 (Dung Ngo, Minh-Thu Le & Phuoc Dinh Le, *Neuropsychology of Vietnamese Americans*, in *The Neuropsychology of Asian Americans* (Daryl E.M. Fujii ed., 2010)); Appendix B at 120–21 (William T. Tsushima, Vincent G. Tsushima & Daryl Fujii, *Neuropsychology of Japanese Americans*, in *The Neuropsychology of Asian Americans* (Daryl E.M. Fujii ed., 2010)).

sexual orientation, disability, language or socioeconomic status is essential for effective implementation of their services.”¹⁶ The APA’s Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists (“Multicultural Guidelines”) in turn stress the importance to the practicing psychologist of “focusing on the client within his or her cultural context, using culturally appropriate assessment tools, and having a broad repertoire of interventions.”¹⁷ For example, in evaluating a client, the Multicultural Guidelines indicate that a psychologist should consider, among other factors, the client’s generational history, including “number of generations in the country” and “manner of coming to the country”; citizenship or residency status, including “number of years in the country, parental history of migration, refugee flight, or immigration”; English fluency; and “level of stress related to acculturation.”¹⁸

¹⁶ American Psychological Ass’n, Ethical Principles of Psychologists and Code of Conduct (2010), Standard 2.01(b), *available at* <http://www.apa.org/ethics/code/index.aspx> (last visited Apr. 2, 2012). Similar language is included in the APA’s Specialty Guidelines for Forensic Psychology (2011), Guideline 2.08, *available at* <http://www.apa.org/practice/guidelines/forensic-psychology.aspx> (last visited Apr. 2, 2012).

¹⁷ American Psychological Ass’n, Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists (hereinafter “Multicultural Guidelines”) 45 (2002), *available at* <http://www.apa.org/pi/oema/resources/policy/multicultural-guideline.pdf> (last visited Apr. 2, 2012); *see also generally* American Psychological Ass’n, Guidelines for Providers of Psychological Services to Ethnic, Linguistic, and Culturally Diverse Populations (1990), *available at* <http://www.apa.org/pi/oema/resources/policy/provider-guidelines.aspx> (last visited Apr. 2, 2012).

¹⁸ Multicultural Guidelines, *supra* note 17, at 46; *see also* American Psychological Ass’n, Guidelines for Providers of Psychological Services to Ethnic, Linguistic, and Culturally Diverse Populations (1990), Guideline 9, *available at* <http://www.apa.org/pi/oema/resources/policy/provider-guidelines.aspx> (last visited Apr. 2, 2012).

Only by ensuring that the evaluating mental health professional is well-versed in a patient's culture (or consults with an appropriately knowledgeable professional) can the mental health issues of minorities and immigrants be adequately and effectively addressed.

B. A Defendant Evaluated by a Mental Health Professional Who Is Not Culturally Competent Is Denied Fair Treatment in the Legal System.

In law, as in the fields of medicine and mental health, the promise of equal access has proven elusive in practice. The integrity of our justice system requires that every litigant, criminal defendant, and victim be treated fairly — a worthy and lofty goal, the complexity of which cannot be underestimated. Most commonly, equal access to justice is considered to be a solely socioeconomic problem, requiring that the expense of judicial proceedings and of representation by qualified counsel not be prohibitively expensive. But true equality of access to justice requires so much more: that all individuals in the community served be able to physically access courts as well as to understand and participate in judicial proceedings,¹⁹ that cases be decided by a fair and capable decisionmaker, and that the rule of law be applied fairly and consistently to all members of society.

¹⁹ The legislature, for example, has sought to ensure that language minorities have meaningful access to the courts. *See* RCW 2.43.010 (“It is hereby declared to be the policy of this state to secure the rights, constitutional or otherwise, of persons who, because of a non-English-speaking cultural background, are unable to readily understand or communicate in the English language, and who consequently cannot be fully protected in legal proceedings unless qualified interpreters are available to assist them.”).

A requirement for cultural competence in the evaluation of a criminal defendant's competency to stand trial speaks squarely to the fair and consistent application of the rule of law to all members of society. The due process clause of the Fourteenth Amendment prohibits the trial or conviction of a criminal defendant while that individual lacks competence to stand trial, and further requires that procedures adequate to protect this right must be observed. *Heddrick*, 166 Wn.2d at 903–04; *Fleming*, 142 Wn.2d at 861. If a culturally competent evaluator is not required, Washington's procedure for evaluating competence to stand trial effectively creates two different standards for due process, condemning minorities and immigrants to a subpar assessment and placing them at grave risk of misdiagnosis based on the evaluator's inability to effectively communicate with the patient and accurately assess the information gathered from the patient.

That Ms. Sisouvanh was the subject of such a subpar assessment is indisputable. Dr. Strandquist, the examining psychologist, failed to consider any culturally relevant information whatsoever in either approaching or evaluating Ms. Sisouvanh — information such as her family's war-induced flight from Laos, the years of her childhood spent in a Thai refugee camp, her struggles in adapting to life in the United States. Instead, Dr. Strandquist incorrectly assumed that Ms. Sisouvanh had led a "pretty average American life." 3-12-10 RP 29:13–14. By conducting such a culturally *incompetent* forensic examination, Dr. Strandquist not only ignored the ethical requirements and practice guidelines of his own

profession, but caused the trial court's eventual denial of Ms. Sisouvanh's due process rights. Amici request that this Court not perpetuate that injustice and that it establish unequivocally that a person's competence to be tried as a criminal in a Washington court must be determined in the context of, and with a qualified understanding of, that person's cultural background.

V. CONCLUSION

As a society, we strive toward equal access to justice for all, including fair and consistent application of the rule of law. For minorities and immigrants, equal access to justice requires that the procedures of the justice system be applied in a culturally competent manner. The necessity of cultural competence has been widely recognized in the fields of medicine and mental health as these professions struggle to address racial and ethnic disparities in performance and treatment outcomes.

Amici urge this Court to require that the competency of a criminal defendant be determined by an expert or professional person who is culturally competent. Anything else will deny minorities and immigrants procedural due process, instead consigning them to a "second class" competency evaluation insufficient to protect their right not to stand trial or be convicted while incompetent. The courts should be leading the charge on cultural competence — not falling behind.

RESPECTFULLY SUBMITTED this 10th day of April 2012.

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APPENDIX A

ORIGINAL

STUDIES ON NEUROPSYCHOLOGY, NEUROLOGY, AND COGNITION

Series Editor:
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The Neuropsychology of Asian Americans

Edited by
Daryl E. M. Fujii



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Series preface

One of the major goals of our book series *Neuropsychology, Neurology and Cognition* is to facilitate the application of neuropsychological knowledge to clinical populations. In editing *The Neuropsychology of Asian Americans*, Dr. Daryl Fujii provides the basis for application of neuropsychological principles and practices to the fastest-growing major racial/ethnic group in the United States in terms of percentage growth. According to the 2000 U.S. census, Asian Americans made up 4.3% of the U.S. population, showing a 63% increase from data gathered in the 1990 census. Asian Americans thus constitute a significant and increasing base of need for clinical services.

In this volume, multiple authors address optimal parameters for providing clinical services to subgroups of Asian Americans in terms of clinical interaction, parameters of the testing context, and suggestions for providing the results of neuropsychological assessment in ways which are culturally competent and sensitive. Even more importantly, the chapters provide a central repository of listing of available resources for each subgroup ranging from Cambodian Americans, to Laotian Americans, to Hmong Americans. Each group, of course has a rich and unique cultural history and context which must be taken into account for competent and ethical clinical practice. The second part of this ground-breaking text addresses the state of knowledge and practice of neuropsychology within the various Asian countries and cultures, leading the reader toward an informed journey of understanding and further exploration of issues and possibilities in expanding their experience with Asian American Neuropsychology.

I welcome this valuable contribution our series and highly recommend *The Neuropsychology of Asian Americans* to anyone who is privileged to interact with the Asian American community in a clinical, research, or scholarly context. It will be an interaction which increases in richness and frequency with each passing decade.

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1 Introduction

Daryl Fujii

Introduction

Although relatively small in number compared to the total American population, Asians are the fastest-growing ethnic minority in the United States. According to the 2000 U.S. Census Bureau, there were 10,171,820 Asians living in the United States, which is about 3.6% of population. The figure rises to 11,859,446, or 4.2% of the total population, if persons of part-Asian ancestry are included. These numbers reflect a 48% to 72% increase for various subgroups from 1990 to 2000 in comparison to 13% of the general population (Barnes & Bennett, 2002). The growth in the Asian population will not only continue but exponentially increase, as by 2050 it is projected that the number of Asian Americans will increase 213% to 33.4 million, or 8% of U.S. population (U.S. Census Bureau, 2004).

Given the growing number of Asians, it is likely that a clinical neuropsychologist will at some point in time be referred a client of Asian heritage. An Asian client may pose a special challenge for Western neuropsychologists, as many are not familiar with Asian culture, and most standard tests and procedures may have questionable validity and reliability with this population (Fujii & Wong, 2005; Wong & Fujii, 2004). Salient issues in working with Asians include ethnic diversity, language barriers, acculturation, and different value systems and communication styles.

Asian Americans are a highly diverse group. The 2000 U.S. Census Bureau lists 24 different ethnicities under the Asian category. The 11 largest Asian ethnicities in the United States are as follows (Barnes & Bennett, 2002):

1. Chinese (2,422,970, 23.8%)
2. Filipinos (1,864,120, 18.3%)
3. Asian Indians (1,645,510, 16.2%)
4. Vietnamese (1,110,201, 10.9%)
5. Korean (1,072,682, 10.5%)
6. Japanese (795,051, 7.8%)
7. Cambodian (178,043, 1.8%)
8. Hmong (170,049, 1.7%)
9. Laotian (167,792, 1.6%)

10. Pakistani (155,909, 1.5%)

11. Thai (110,851, 1.1%)

Not only are Asians ethnically diverse, but they are demographically diverse as well. For example, although known as the "model minority" due to high academic and occupational achievement, persons with a bachelor's degree or higher range from a high of 63.9% for Asian Indians to 7.7% and 7.5% for Laotian and Hmong, respectively. Similarly, although the median family income of all Asians was \$9,000 higher than the median for all American families (\$59,300 vs. \$50,000), median incomes of subgroups vary from a high of \$70,849 for Japanese to a low of \$32,384 for Hmong. These differences illustrate that "one size does not fit all" when understanding Asian ethnic groups, as characteristics of one ethnicity do not necessarily apply to another. This diversity increases the knowledge base required for working with Asian Americans, thereby making it more difficult to work with this population.

Language barriers are another issue. It is estimated that 69% of the Asian Americans are foreign born. Asian Indians, Vietnamese, Koreans, and Thais are the subgroups with the highest percentage of foreign-born persons, ranging from 75% to 78% (Reeves & Bennett, 2004). By contrast, the Asian ethnic group with the lowest percentage of foreign born is the Japanese, at 39% (Reeves & Bennett, 2004). An implication of this demographic is that a large number of Asian Americans are not proficient in English. Data from the 2000 U.S. Census Bureau indicate that 79% of Asian households speak a language other than English at home, with percentages ranging from 47% for Japanese households to over 90% for Cambodians, Laotians, and Vietnamese, and 96% for Hmong (Reeves & Bennett, 2004). Forty percent of Asians are reported to speak English less than "very well," with the highest percentage being the Vietnamese, 62%. The Japanese were the only subgroup with over 50% of the households speaking only English at home (Reeves & Bennett, 2004).

An issue related to immigration is acculturation. In addition to language spoken at home and whether one was foreign born, years living in the United States is another contributor to level of acculturation. Data from the 2000 census indicate varying patterns of immigration for each Asian subgroup. For example, the numbers of Asian Indian immigrants have steadily increased over the past decades, with 18.2% immigrating before 1980, 27.8% immigrating in the 1980s, and 54% during the 1990s. Immigration patterns for Filipinos have been relatively steady across the three decades, with 31.3%, 33%, and 35.6% immigrating to the United States before 1980, during the 1980s, and the 1990s, respectively. By contrast, immigration patterns of Southeast Asians, including Cambodians, Hmong, and Laotians, resemble a bell-shaped curve, with significantly large numbers of persons immigrating in the 1980s, and much fewer immigrating before 1980 and after 1989 (Reeves & Bennett, 2004). The different patterns in longitudinal immigration would suggest different levels of acculturation both between and within specific Asian ethnicities.

Acculturation issues are particularly salient in Asian populations. Unlike many Western societies, which are heavily influenced by Judeo-Christian religions and beliefs, Asian values are influenced by Eastern religions such as Buddhism and Hinduism, which emphasize selflessness and a harmony with nature and others. The different

foundational influence is a double-edged sword, as it affects both a foreign-born individual's adjustment to Western society and a neuropsychologist's ability to understand behaviors and develop rapport, the latter essential for data gathering. In addition, typical Asian behaviors associated with illness, such as routinely agreeing with authority figures, including health care professionals, to show respect even if one disagrees, and a tendency to somaticize emotional problems, may confuse Western clinicians who may be unfamiliar with these behaviors (Wong & Fujii, 2004).

Despite the growing numbers of Asian Americans, there are very few Asian neuropsychologists practicing in America. Preliminary data indicate the numbers of Asian American neuropsychologists in comparison to the total number of neuropsychologists are lower than the percentage of the population in America. A rough estimate of Asian American neuropsychologists based upon identifying Asian surnames on the International Neuropsychological Society's (INS) membership directory for U.S. citizens resulted in roughly 115 names, or about 3% of the total number of American neuropsychologists ($n = 3855$). Numbers are very similar (3.1%) when Canadian neuropsychologists are included (130/4211). These percentages are about 20% or 28.5% lower than the percentage of Asians or part-Asians in America, respectively.

Not only are there too few neuropsychologists, but the ethnic distribution of neuropsychologists does not coincide with that of Asian Americans. As mentioned previously, the largest Asian ethnicities in descending order are Chinese, Filipinos, Asian Indians, Vietnamese, Koreans, and Japanese. By contrast, the Asian ethnicities with the most neuropsychologists in order are Chinese, Asian Indian, Korean, and Japanese. Thus, among the Asian ethnic groups with the highest populations, both Filipinos and Vietnamese have very few practicing neuropsychologists.

Using a similar methodology with the American Academy of Clinical Neuropsychology (AACN) directory, 11 board-certified Asian neuropsychologists were identified: Japanese, 4; Chinese, 3; Korean, 2; and Asian Indians, 2; which is roughly 1.7% of all neuropsychologists certified by the American Board of Professional Psychology (ABPP). Again, the ethnic distribution does not coincide with the ethnic distribution of Asian Americans. Another interesting statistic is the distribution across states: Hawaii, 3; California, 3; Ohio, 2; New York, 2; and Washington, DC, 2. These numbers indicate that board-certified Asian neuropsychologists are primarily located on the coasts and in Hawaii, leaving 46 states without an ABPP-credentialed Asian neuropsychologist.

Numbers are even smaller for neuropsychologists reporting proficiency in Asian languages. The following are the number of neuropsychologists speaking Asian languages listed on the National Academy of Neuropsychology (NAN) directory: Chinese, 4 (Chinese, Cantonese, Mandarin unique clinicians combined); Vietnamese, 4; Asian Indian, 3 (Gurajati, Hindi, Urdu unique clinicians combined); Filipino, 3; Japanese, 2; Korean, 1; and Malay, 1. Although numbers are small, the distribution of speakers is generally consistent with the Asian population broken down by ethnic groups. The following is the distribution of clinicians across the states (including Canada): Washington, 5; California, 4; Utah, 2; Oregon, 1; Texas, 1; Ohio, 1; Indiana, 1; Virginia, 1; Massachusetts, 1; and Alberta, 1. These numbers indicate a strong West Coast bias followed by the Midwest and East Coast.

4 The neuropsychology of Asian Americans

It should be emphasized that the methodology for procuring these data is crude. First, the population estimates are based upon 2000 census data, while the clinician numbers are based upon 2008 data. Differences in data sources would suggest that population numbers underestimate the actual numbers of Asian Americans. Similarly, our number likely underestimated the numbers for both Asian neuropsychologists and neuropsychologists proficient in Asian languages. Our data do not account for Asians who have non-Asian surnames due to marriage or adoption, those who do not belong to one of the major neuropsychological associations, or those who did not list their foreign language ability. Also, some Asian surnames are identical to Western names, for example, Lee, Young, Alvarez, and Martinez; thus, some clinicians may have been mistaken for European or Hispanic and not included as Asian. Given this caveat, it should be mentioned that the author did experience significant difficulty in finding potential contributors to this book for many of the ethnic subgroups, particularly the ones with few numbers as reported by this methodology, thereby lending credence to these results.

The relatively small numbers of Asian neuropsychologists, particularly for many of the specific ethnicities, such as Filipino and Vietnamese, are alarming for Asian clients seeking neuropsychological services, as it is assumed that a neuropsychologist who shares the same ethnic background and speaks the same language as the client would be more likely to produce a culturally informed evaluation due to familiarity with the culture, ability to develop rapport, and better communication. It should also be emphasized that just because a neuropsychologist is of a related Asian heritage as a client (e.g., Chinese clinician, Hmong client), this does not guarantee culturally informed services, as there is much diversity within specific Asian ethnicities, and an Asian clinician may be just as naïve about a specific culture than a non-Asian one. In any case, an implication of the shortage of Asian neuropsychologists is that non-Asian neuropsychologists will have ample opportunity to provide services to Asian clients.

In summary, Asians are the fastest-growing ethnic minority in the United States. Asians are diverse with the U.S. Census, listing 24 distinct ethnicities in the Asian category. There are few Asian neuropsychologists who can provide services to this population, particularly in ethnic subgroups such as Filipinos, Vietnamese, Cambodian, Laotians, Hmong, and Thai. Thus, many Asian clients in need of neuropsychological services would likely have to seek services from a non-Asian clinician or Asian clinician who may not be entirely familiar with the client's culture. Asian clients can pose special challenges to neuropsychologists due to issues of ethnic diversity, language barriers, acculturation, and differences in values and communication style. Given the number of pertinent issues that require attention for a clinician to perform a culturally informed evaluation, a neuropsychologist, particularly non-Asian, may be reluctant to work with an Asian client.

Purpose of this book

The purpose of this book is twofold. The first purpose, associated with the section on neuropsychology of Asian Americans, is to provide clinical neuropsychologists with

a knowledge base of the demographic, cultural, and neuropsychological literatures, and practical recommendations for working with the major Asian ethnic groups to facilitate culturally informed neuropsychological evaluations. The overall goal is to increase the resource pool of neuropsychologists who are competent in delivering services to Asian Americans.

A second, but related purpose, associated with the second part of this book, is to educate researchers and clinicians on neuropsychological practices and scientific literature in several Asian countries. For clinicians, these chapters may identify neuropsychological resources that would be useful for evaluating or treating a person from that Asian country. This information could also assist clinicians performing court evaluations in meeting *Daubert* level standards of evidence by incorporating tests used by clinicians, or citing rationales for test selection based upon neuropsychological practices in an Asian person's native country. Another area of interest for clinicians would be learning about professional issues such as educational and training procedures and requirements, licensure, and professional organizations in different Asian countries.

For researchers, a peek into the neuropsychological literature can hopefully lead to a cross-fertilization of research ideas, or cross-cultural validation or refutation of neuropsychological findings or assumptions based upon Western research. This exposure to new ideas can hopefully inspire new directions for research or developing new technologies.

The remainder of the chapter will describe a framework for clinicians on how to use the information in this book to perform culturally informed neuropsychological evaluations with Asians.

How to use information from the book

Each Asian American chapter is organized similarly, covering topics such as immigration history, reason for immigration, educational system in home country, educational achievement and occupational attainment in America, cultural values, family structure, attitudes toward illness, neuropsychological testing, recommendations for testing, and an illustrative case sample. Information from these chapters should be used in the following manner:

1. Provide a knowledge base for understanding and developing rapport with persons from a specific Asian ethnic group
2. Assist in determining testing strategy or test selection
3. Assist in test interpretation
4. Assist in making recommendations

Due to lack of norms and shared clinical issues for several Asian American ethnicities (Cambodian, Hmong, Laotian), recommendations for these groups are very similar. Although repetitive, the same recommendations are repeated in these chapters for easy reference.

Provide a knowledge base

Before selecting a test strategy, clinicians require a knowledge base for understanding a person with a different cultural background. In many ways, this lack of understanding would be like trying to watch a 3D movie without the special glasses. Perceptions are blurry and it is difficult to appreciate the movie. However, once the glasses are worn, it is amazing how crystal clear the images become. Knowledge from each chapter can assist the clinicians in the following ways:

1. Provide a conceptual framework for understanding a person who was born and raised in another country. Some important factors include primary reasons for immigration, immigration patterns, acculturation, values, belief system, and general experiences in the country of origin and America that may shape values and behaviors.
2. Provide a context for evaluation. For example, many Asians do not typically see psychologists or mental health professionals unless a condition is serious due to shame, stigma, or attribution to karma, the latter because the person cannot do anything about his fate, which is deserved.
3. Help to understand the dynamics of the clinician-client relationship as perceived by the Asian client. For example, an Asian client may perceive the psychologist as an authority figure who is all-knowing or someone who is respected and with whom you should not disagree.
4. Help provide a strategy for interviewing the client and developing rapport. Many Asians may have trust issues and can be passive in providing information. Thus, encouraging clients to talk about their country, experience with immigration, or their name, or allowing family to participate in the interview process may be useful.
5. Provide guidance for working with interpreters. With a general knowledge base, clinicians can better inform interpreters of goals, clarify uncertainties, and map out strategies for interviewing or possibly translating tests.
6. Provide clues for understanding specific behaviors. For example, saying yes or head nodding may not mean agreement, but instead be polite gestures to an authority figure.
7. Provide a framework for understanding the client. Given the person's cultural background, presentation, and personal history, what can you surmise about this individual? What is his or her level of acculturation given his or her generation? How is he or she functioning socially, academically, or occupationally in comparison to his or her peers? What are some hypotheses for cognitive functioning? In this regards it should be emphasized that there is marked diversity within each Asian ethnic group, and thus rigid stereotyping should be avoided.

Testing strategy and test selection

Next, information can be used to assist the clinician in determining testing strategy or test selection: In performing neuropsychological evaluations with Asian clients,

Fujii and Wong (2005) recommend either a norm-based testing or hypothesis testing strategy. The authors argue that both methodologies are sound and would meet *Daubert* standards for admissibility of scientific evidence in a court of law if the report is used for forensic purposes. The criteria for determining relevance and reliability of scientific evidence include (1) whether a technique can be tested, (2) whether a technique has been subject to peer review, (3) whether the error rate for the technique is known, and (4) whether the technique has general acceptance in the scientific community (for a review see Fujii & Wong, 2005).

The norm-based testing approach is the standard procedure of neuropsychological assessment whereby the clinician uses tests such as the Wechsler Adult Intelligence Scale-IV or Wisconsin Card Sort that have been standardized, normed, and validated. In this method, the science is based in the empirically validated tests and their psychometric properties. Evaluations based upon this strategy should meet *Daubert* criteria 1, 2, and 4. The strategy could meet criteria 3 for specific populations if there are empirical studies reporting sensitivities and specificities for diagnoses or a clinical criterion.

In the hypothesis testing approach, the clinician develops a hypothesis of normal functioning or a pattern of deficits based upon what is known about a specific neurological disorder, and then supports or refutes the hypothesis based upon data obtained through interviews, observations, neuroimaging data or other labs, and test scores. Although this methodology is not new and is often implicit in clinical decision making, it is recommended that this decision-making process be made explicit in the report with articulated hypotheses.

In this approach, it is recommended that clinicians use consensus statement criteria or the literature on neurobehavioral syndromes for developing hypotheses. For example, if a diagnosis of frontotemporal dementia is suspected, a clinician may use the Neary et al. (1998) consensus statement as criteria to base his or her hypotheses for the presence of this disorder. The clinicians would then look for data from different sources to determine if the client's cognitive, behavioral, and emotional symptoms, onset and progression of illness, neuroimaging data, and available test data are consistent with each consensus statement criteria for a frontotemporal dementia. If the person meets criteria, hypotheses about prognosis and future functioning can be made as well as clinical recommendations. Similarly, if an individual sustained a right frontal stroke, the clinician would hypothesize cognitive, behavioral, or emotional syndromes associated with lesions to this area. Thus, clinicians should be familiar with the cognitive-behavioral neurology literature. *Principles of Behavioral and Cognitive Neurology* (Mesulam, 2000), *Neuropsychiatry and Behavioral Neuroscience* (Cummings & Mega, 2003), and *Clinical Neuropsychology* (Heilman & Valenstein, 2003) are recommended resources. It is argued that the hypothesis testing strategy should meet *Daubert* criteria 1, 2, and 4.

The hypothesis testing approach is more useful for diagnostic purposes versus specific measurement of cognitive deficits, but can be useful for prediction or providing rough estimates or educated guesses of cognitive functioning, as well as making recommendations. Although this type of evaluation can be conducted by other disciplines, such as neurology or psychiatry, it is argued that psychologists generally

tend to be more thorough and systematic in their data gathering and development of behavioral or practical recommendations.

For Asian clients, a norm-based testing approach with Western-based tests is recommended if the client meets any of the following criteria: (1) the client received a college-level education with courses that are generally taught in English, (2) the client has lived in the United States for many years from a young age and is competent in English, (3) English is the primary language spoken at home, or (4) the client has performed at the average level or higher on national standardized tests (e.g., Stanford Achievement Test). Depending on observation of English fluency and background history, test selection may emphasize nonverbal tests, and any interpretation of verbal tests should be made with caution. A norm-based test strategy is also recommended if normed and validated tests are available for a person's ethnic group and demographic profile. In these cases, however, the clinician would have to procure the tests and may need an interpreter if he or she does not speak the language.

A hypothesis testing approach is recommended when (1) a client does not match American demographics for neuropsychological test samples due to low level of education or quality of education, and poor command of English, (2) there is no supportive literature suggesting equivalent performances on similar neuropsychological tests, and (3) there are no normed tests developed in the client's language or country. Information on education and English skills, the neuropsychological literature in the client's native country, and neuropsychological or academic performances in the United States would be particularly relevant to determine testing strategy.

If norm-based tests are not available for a particular ethnic group, and the clinician would like some neuropsychological measurement data for a ballpark estimate of functioning, it is recommended that the clinician translate tests with the most cross-cultural validation or validation in a country similar in education, location, and socioeconomic status. An example of a cross-culturally validated instrument would be the World Health Organization (WHO) neuropsychological battery, which has normative samples in Germany, Brazil, Zaire, Kenya, and Thailand (Maj et al., 1994). Words for the 15-item auditory verbal learning test can be found in Mitrushina, Boone, Razani, and D'Elia (2005). When translating materials, the clinician should be aware of issues in translation and equivalence, and back-translate items if possible (for a review, see Fouad & Chan, 1999). Caveats for interpreting findings from these translations are discussed in the next section.

Assist in test interpretation

Information from each chapter would be useful for providing a context for understanding test scores. Gross estimates of premorbid and general functioning can be made based upon amount and quality of education, English skills and exposure, acculturation, occupational and academic history, and neuropsychological literature. If deemed appropriate, clinicians could make interpretive adjustments when reviewing scores. For a norm-based test strategy, interpretive adjustments could be made if norms from an ethnic group are low. For example, if an ethnic group has been found to perform significantly lower than Americans on the Trailmaking Test, a low

score on this test should not be interpreted as impaired functioning. For a hypothesis testing strategy, interpretive adjustments could be made if there is evidence that the amount and quality of education is low for an ethnic group and the clinician decides to use some Western tests. For example, if an ethnic group scores a mean of 90 on Raven's Progressive Matrices (RPM), the clinical implication of a 79 score should not be the same as it would for Western norms.

There are several caveats when attempting to make interpretive adjustments. First, just because an ethnic group produces lower scores on Western tests, the clinician should not automatically perceive these people to be less intelligent than Westerners, as other factors, such as education, quality of education, English skills, and acculturation, can significantly affect test scores. A perfect example is the significantly low scores of many European immigrants who entered America through Ellis Island and whose progeny became successful in the new land. Second, when making interpretive adjustments with a hypothesis testing strategy, clinicians should use broad strokes when making interpretations. Thus, much less confidence can be placed in smaller differences between scores. More confidence can be placed with larger discrepancies, consistency of poor scores within a domain, or deficit patterns that are consistent with expectations for a specific neurological disorder or findings on neuroimaging. Third, when attempting to make adjustments, clinicians need to consider the education and occupational levels of the samples that produced the available test scores. Dates of studies are also important, as for many third-world countries or those with emerging economies, the educational systems can make significant improvements in a few decades. In addition, exposure to and teaching of English can also change over a relatively short period of time. Thus, test norms collected on urban 15-year-olds in 1975 would apply to 49-year-old immigrants who lived in urban areas in their native country, but less so for a 15-year-old who immigrated from a rural area in 2006.

When writing reports, it is imperative that clinicians describe limitations in validity and provide rationales for interpretive adjustments. As mentioned previously, for hypothesis testing approaches, hypotheses should be stated, and then supported or refuted based upon the evidence from interviews, observation, history, and medical data. As a rule, clinicians should emphasize caution in interpretation of test scores as well as functional implications. Caution is especially imperative when interpreting translated tests, although normal performances can be more confidently interpreted to rule out impaired functioning. It is recommended that clinicians indicate a confidence level of interpretation (e.g., high, medium, low). This confidence level can be specific to tests, diagnosis, or functional implications. Clinicians should also list additional information needed to support or refute hypotheses, as well as alternative hypotheses.

Assist in making recommendations

Finally, information from each chapter would be useful for making recommendations congruent with the values of the individual and family members. Clinicians should be aware of how values, spiritual beliefs, and beliefs about mental and medical illness can influence how individuals and families react to neuropsychological

findings and recommendations. Some considerations include: How do findings fit in the individual's belief system or values? What are individual and family strengths that would facilitate understanding of findings and support follow-through on recommendations? How can these strengths be mobilized? What beliefs or values can hinder appreciation of findings and follow-through on recommendations? How can these challenges be overcome?

Once recommendations are conceptualized, the next step is to determine the most effective manner of communicating neuropsychological findings and recommendations to individual and families in order to maximize understanding and follow through. Knowledge of values and beliefs, as well as dynamics with clinicians, and communication styles, will be useful for determining strategies.

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2 Neuropsychology of Cambodian Americans

Daryl Fujii, Barbara W.K. Yee, Sopagna Eap, Theanvy Kuoch, and Mary Scully

Brief history

Cambodia is located in Southeast Asia and was once the kingdom of Angkor (802–1431). The country was inhabited for about 2000 years by the Khmer, whose culture was strongly influenced by Indian civilization and Hinduism (see Chan, 2004, for detailed Cambodian history). Cambodia was raided by Thailand and Vietnam from the fourteenth to mid-nineteenth centuries. The French colonized Cambodia in 1863. Not considered to be a strategic colony like Vietnam, the French did little to develop infrastructure, such as roads, hospitals, schools, or industries, in the mostly agrarian society. In fact, the Vietnamese were assigned by the French to be administrators in Cambodia (Kim, 2002). Cambodia was granted independence in 1953 and was governed by King Sihanouk and his political party members until 1970.

Cambodia's peaceful independence was disrupted in the late 1960s by the fallout of the Vietnam War, as Americans dropped 2.7 million tons of bombs on the border area between Cambodia and Vietnam. Civil war broke out in 1970 between the Communist-backed Khmer Rouge and Lon Nol's Khmer Republic, causing millions of refugees to flood the major urban areas, seeking safety, only to endure the disease, malnutrition, and starvation caused by overcrowded camps.

The Khmer Rouge, under the leadership of Pol Pot, proved victorious in 1975. In an attempt to reeducate the population, this regime was responsible for one of the worst reigns of genocide in history. An estimated 1.5 million Cambodians, or approximately 20% of the total Cambodian population, were killed by execution, disease, or starvation in brutal labor camps. The educated and wealthy were the primary targets, as approximately 90% of Cambodia's doctors, lawyers, teachers, clergy, and businesspersons were exterminated. The regime also targeted minority groups such as the Cham for total extermination. According to numerous sources, the Khmer Rouge government relocated 2.5 million city dwellers to rural Cambodia, separating children from parents and spouses from one another. Such policies resulted in rapid disruption of long-standing traditional Cambodian culture, society, and governance. Cambodians who fled their country during this period experienced extreme losses:

APPENDIX B

STUDIES ON NEUROPSYCHOLOGY, NEUROLOGY, AND COGNITION

Series Editor:
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The Neuropsychology of Asian Americans

Edited by
Daryl E. M. Fujii



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Series preface

One of the major goals of our book series *Neuropsychology, Neurology and Cognition* is to facilitate the application of neuropsychological knowledge to clinical populations. In editing *The Neuropsychology of Asian Americans*, Dr. Daryl Fujii provides the basis for application of neuropsychological principles and practices to the fastest-growing major racial/ethnic group in the United States in terms of percentage growth. According to the 2000 U.S. census, Asian Americans made up 4.3% of the U.S. population, showing a 63% increase from data gathered in the 1990 census. Asian Americans thus constitute a significant and increasing base of need for clinical services.

In this volume, multiple authors address optimal parameters for providing clinical services to subgroups of Asian Americans in terms of clinical interaction, parameters of the testing context, and suggestions for providing the results of neuropsychological assessment in ways which are culturally competent and sensitive. Even more importantly, the chapters provide a central repository of listing of available resources for each subgroup ranging from Cambodian Americans, to Laotian Americans, to Hmong Americans. Each group, of course has a rich and unique cultural history and context which must be taken into account for competent and ethical clinical practice. The second part of this ground-breaking text addresses the state of knowledge and practice of neuropsychology within the various Asian countries and cultures, leading the reader toward an informed journey of understanding and further exploration of issues and possibilities in expanding their experience with Asian American Neuropsychology.

I welcome this valuable contribution our series and highly recommend *The Neuropsychology of Asian Americans* to anyone who is privileged to interact with the Asian American community in a clinical, research, or scholarly context. It will be an interaction which increases in richness and frequency with each passing decade.

Linus A. Bieliauskas
Ann Arbor
May, 2010

7 Neuropsychology of Japanese Americans

*William T. Tsushima, Vincent G. Tsushima,
and Daryl Fujii*

A review of the neuropsychological literature of the past 25 years suggests that issues of race, ethnicity, and culture have been generally ignored (Puente & Perez Garcia, 2000a). Some neuropsychological reports are available on African Americans and Hispanic Americans, but similar research on Japanese Americans and other Asian Americans is virtually nonexistent. Available data pertinent to the neuropsychological assessment of Japanese Americans appear in publications outside of neuropsychology, such as social psychology, cross-cultural, or educational journals and textbooks. Thus, neuropsychologists, as a whole, are probably uninformed regarding characteristics of Japanese Americans that could be related to their performance on neuropsychological tests.

The aims of the present chapter are to (1) present a brief history of the Japanese in America, (2) describe the status of education in Japan, (3) provide results of psychological testing in Japan, (4) summarize the presence of neuropsychology in Japan, (5) present research that is pertinent to the neuropsychological assessment of Japanese Americans, (6) highlight the psychological and cultural variables that are germane in the neuropsychological assessment of ethnic minority individuals, (7) provide the results of a comparative study of Japanese and Caucasian Americans on varied subtests of the Halstead-Reitan Neuropsychological Battery, and (8) offer some maxims for the examiner of Japanese American patients.

Brief history of the Japanese in America

People from Japan began migrating to the United States following the widespread sociocultural and political changes of the Meiji Restoration (1868–1912), which marked the beginning of the modern era of Japan. In 1869 the first group of people to arrive from Japan was 22 settlers at Gold Hill, California, where they built the Wakamatsu Tea and Silk Farm Colony. The immigrants brought mulberry trees, silk cocoons, tea plants, and bamboo roots. By 1880, 148 Japanese lived in the United States.

Japanese laborers were able to leave their country legally only after 1884, when an agreement was signed between Japan and Hawaiian sugar plantations. Japanese men were recruited for their expertise in agriculture, their work ethic, and their

willingness to travel. By 1890, 2,038 Japanese resided in America, providing labor in Hawaii sugarcane and pineapple plantations and California fruit and produce farms. By the turn of the century more than 300,000 men and women left Japan for Hawaii and the U.S. Pacific Coast.

As with the Chinese, the welcoming of Japanese immigrants decreased as their numbers increased. With pressure from the Asiatic Exclusion League and others, President Theodore Roosevelt in 1907 negotiated a "gentlemen's agreement" that called for Japan to issue passports to Japanese coming to the continental United States only if they were joining a parent, husband, or child, or to return to a former home or farm. This agreement greatly diminished Japanese emigration to America, except the many "picture brides"—women who arrived for arranged marriages to Japanese laborers. A movement to exclude Japanese newcomers totally led to the U.S. Immigration Act of 1925, also known as the Oriental Exclusion Act, which banned immigration from Japan until 1952, when 100 immigrants per year were allowed.

The ban on immigration produced well-defined generational groups within the Japanese American community. The generation who migrated to America before 1924 became known as the Issei (first generation), and their U.S.-born children are the Nisei (second generation). The Nisei became a distinct cohort from the Issei generation in terms of age, citizenship, education, and English language ability, as well as the usual generational differences. Many of the Nisei married other Nisei, producing a third distinct generation of Japanese Americans, the Sansei (third generation).

Culturally the Issei spoke Japanese and were strongly identified with Japan, the Nisei acculturated in America but tended to be bicultural, while the Sansei were primarily American in orientation (Kitano, 1993). The generational significances may be fading with advancing generations, such as the Yonsei (fourth generation) and Gosei (fifth generation), who appear to be highly Americanized, particularly with the increasing numbers of interracial marriages among Japanese Americans.

The Japanese immigration that ceased in 1925 resumed after the Immigration Reform Act of 1965, which ended 40 years of bans against immigration from Japan and other countries. In recent years, immigration from Japan has declined and has been similar to Western Europe, on average 5,000 to 10,000 per year, in contrast to the larger numbers migrating from the rest of Asia. The major reasons for the reduced immigration from Japan appeared to be the residual anti-Japanese sentiment following World War II and Japan's robust economy in the latter part of the twentieth century. More recent immigrants have included expatriate professionals and businessmen, former college students who studied in America, and military wives (Gondo, 2009). Additionally, the economic boom in Japan has sent about 100,000 Japanese executives of U.S. subsidiaries of Japanese companies to America, who stay for three to five years while maintaining their Japanese citizenship (Gondo, 2009). Similarly, college students, although technically not immigrants, are a significant group of Japanese nationals living in the United States.

Like other immigrants to the United States, the Japanese encountered discrimination in their new country. In 1905, the Asiatic Exclusion League urged the San Francisco Board of Education to require all Japanese and Korean children to join the Chinese at the segregated Oriental School established in 1884. Beginning in 1909,

and continuing until after World War II, anti-Japanese bills were introduced every year into the California legislature. In 1921, California established separate schools for Japanese, Chinese, Indian, and other Asian children, who attended segregated schools until the law was amended in 1947. In 1922, the U.S. Supreme Court ruled in *Takao Ozawa v. United States* that Ozawa, as a Mongolian, did not have the right of naturalization, thus ruling that Japanese were ineligible for U.S. citizenship. The most infamous discriminatory act toward Japanese Americans was Executive Order 9066, signed by President Franklin D. Roosevelt on February 19, 1942, which established 10 relocation centers in California, Idaho, Utah, Arizona, Colorado, New Mexico, and Arkansas during World War II. This wartime decree ordered the incarceration in internment camps of more than 120,000 Japanese Americans, over two-thirds of whom were U.S. citizens. In 1968 the U.S. government acknowledged the injustices and began reparations to Japanese Americans for property they had lost during the war, and in 1988, the U.S. Congress passed legislation that awarded \$20,000 to each of the 600,000 surviving internees.

Japanese Americans have historically been among the three largest Asian American communities, but in recent decades they have become the sixth largest Asian group in the United States, behind the Chinese, Asian Indian, Filipino, Vietnamese, and Korean groups. According to the U.S. Bureau of the Census, there are 833,761 Japanese Americans, accounting for 6.7% of all Asians in the United States (U.S. Bureau of the Census, 2005). The largest Japanese American communities reside in California, Hawaii, Washington, New York, and Illinois.

Education in Japan

Japan is known for its well-maintained educational system and outstanding academic achievement. The literacy rate is roughly 95%, compared to 88% in the United States. A Japanese high school diploma is considered to be equal to two years of American college (Ellington, 2001). Japanese children consistently rank at or near the top in international tests of mathematics and science. A comparison of 13-year-olds' average scores in math and science indicated that Japan was ranked fifth, behind Singapore, Taiwan, South Korea, and Hong Kong, while the United States was ranked twelfth (International Association for the Evaluation of Educational Achievement, 2003).

A mathematics test administered to first-grade and fifth-grade children in Japan, Taiwan, and the United States indicated that those from Asia consistently performed at a higher level than their American counterparts (Stigler, Lee, Lucker, & Stevenson, 1982). In a subsequent study, Chinese children surpassed Japanese and American children in scores, while both Chinese and Japanese children obtained higher mathematics scores than American children (Stevenson et al., 1985). However, the children from the three countries performed similarly in a battery of 10 cognitive tasks. The results suggested that the higher academic achievement of Japanese and Chinese children was not attributed to higher intellectual abilities, but to their experiences at home and school.

In a more recent study, first graders in Japan, China, and the United States were given achievement and cognitive tests, and retested 10 years later with achievement

tests (Chen, Lee, & Stevenson, 1996). Japanese and Chinese students at both grades had higher mathematics scores than the American students. American and Chinese students received higher reading scores than the Japanese students at both grades. The family's socioeconomic status was the most significant predictive variable pertaining to the academic achievement in all three countries.

In recent decades, the Japanese have accepted English as the current international language, and have included English as a compulsory subject in their schools. Japanese students now have at least six years of English in school, and four more years for those who attend college. It is also common for Japanese parents to have their children from the age of 5 learn English in private, after-school settings. This does not mean that most Japanese can speak English; however, the number of English speakers is increasing.

Psychological test results in Japan

Measures of intellectual functioning in children in Japan have been recorded in a number of investigations. Table 7.1 shows IQs on various American tests of intelligence, largely reported by British psychologist Richard Lynn, who became known for his controversial views on racial and ethnic differences. He asserted that the Japanese have the highest intelligence in the world (Lynn, 1977), and proposed that their abilities should be regarded as genetically programmed (Lynn, 1987), or influenced by early childhood nutrition (Lynn, 2006). Lynn also opined that the Japanese superior perceptual and spatial abilities could be due to advantageous environmental conditions (Lynn & Hampson, 1986b), and their better performance in mathematics was due to superior teaching efficiency in Japanese schools (Lynn, 1987).

While Lynn received recognition and support in some circles (Herrnstein & Murray, 1994; Lykken, 2004), his work has been severely criticized for its lack of scientific objectivity, data misrepresentation, and racism (Kamin, 1995); failure to control for socioeconomic status and location of residence (rural vs. urban) (Stevenson & Azuma, 1983); inappropriate comparisons and data omission (Flynn, 1983); and statistical errors and incorrect assumptions about subtests (Kaufman, McLean, Ishikuma, & Moon, 1989). Other researchers found no overall difference between Japanese, Chinese, and American children on a battery of cognitive tasks and school achievement tests (Stevenson et al., 1985). Suzuki and her associates (1997, 2005) state that the factors associated with intelligence go beyond genetic influences and involve socioeconomic status, home intellectual climate, and educational attainments. They further oppose racial-ethnic generalizations about intelligence, citing numerous studies that demonstrate greater within-group differences than between-group differences. A comprehensive discussion of the issues regarding the intelligence scores of the Japanese is beyond the scope of this chapter.

Neuropsychology in Japan

The field of neuropsychology in Japan has its roots at the end of the nineteenth century, with the first known treatise on aphasia in 1893 by Onishi (Hamanaka, 1994).

Table 7.1 Results of intelligence testing with Japanese children

<i>Subjects</i>	<i>Tests</i>	<i>Results</i>	<i>Reference</i>
Japanese and Ainu 6-year-olds	Goodenough-Harris drawing test	Mean IQ 138	Hilger, Klett, & Watson, 1976
Japanese 13- to 15-year-olds	Differential Aptitude Tests	Mean IQ 104.5 for abstract reasoning Mean IQ 114 for spatial ability	Lynn, Hampson, & Iwawaki, 1987
Japanese standardization sample	WISC Performance (Performance subtests and Digit Span)	IQ 102	Lynn, 1977
Japanese standardization sample	WAIS (Digit Symbol, Block Design, and Digit Span)	IQ 102	Lynn, 1977
Japanese standardization sample	WISC-R	FSIQ 103	Lynn & Hampson, 1986a
Japanese children ages 4-9	Columbia Mental Maturity Scale	IQ 107	Misawa, Motegi, Fujita, & Hattori, 1984
Japanese children ages 2½-8½	McCarthy Scales of Children's Abilities	Average general IQ, low verbal, high perceptual	Lynn & Hampson, 1986b
Japanese children ages 4-5	WPPSI	Average general IQ, low verbal, high perceptual	Lynn & Hampson, 1987
Japanese children grades 1-5	10 cognitive tasks and achievement tests in reading and mathematics	Similar to American and Chinese children	Stevenson et al., 1985

At the beginning of the twentieth century, Japanese neuroscientists examined aphasic patients and their functioning with the dual writing system, kanji and kana. These two distinct systems of letters that have been used in the Japanese language for more than 1200 years continue to be the focus of scientific investigation (Iwata, 2007).

The first neuropsychological monograph in Japan was published in 1935, citing the significance of the apraxic aspects of apraxic disorders (Akimoto, 1976). Ohashi (1960) authored the first comprehensive textbook of neuropsychology in Japan. Contemporary neuropsychology flourished in the 1970s with the establishment of the Japanese Society of Aphasiology in 1975 and the Neuropsychological Association of Japan in 1977 (Murai, Hadano, & Hamanaka, 2002). Several Japanese translations of classic textbooks and authoritative books in European, Russian, and American neuropsychology were published, including the works of Broca, Wernicke, and Luria.

In recent years, neuropsychological research in Japan has been devoted to the dementias, frontal lobe syndromes, and memory disorders. There has been considerable interest in aphasia, alexia, and agraphia, as well as to the disconnection syndrome and specific right-hemisphere syndromes (Hamanaka, 1994; Murai et al., 2002). A number of pioneering efforts by Japanese researchers have appeared in international publications, such as the *Journal of the International Neuropsychological Society* (e.g., Matsui et al., 2007).

Neurolinguistic impairments related to the unique orthographic and grammatical characteristics of the Japanese written language have been the focus of considerable research in Japan. Sasanuma (1986), for example, identified at least four combinations of *kanji* (ideo-phonogram) deficits and *kana* (phonogram) deficits in alexia-agraphia associated with various aphasic syndromes. In a series of case studies, Iwata (2007) reported patients whose *kanji* reading was severely impaired, while showing no difficulty in reading and writing *kana*. The *kanji* alexia and agraphia were attributed to lesions affecting the left posterior inferior temporal area, confirmed by PET scan findings. As a result of these findings, Iwata proposed a new model of neural circuit reading and writing process in the Japanese language. While the Japanese language has unique characteristics, the investigation of linguistic disorders specific to the Japanese language may have implications for neuropsychological assessment in general (Murai et al., 2002).

Various standardized psychological tests developed in the United States and Europe have been translated or adapted for the Japanese, including the Wechsler Intelligence Scales, Stanford-Binet Intelligence Scale, McCarthy Scales of Children's Abilities, Wisconsin Card Sorting Test, Rey Auditory Verbal Learning Test, Mini-Mental State Examination, Raven's Colored Progressive Matrices, Benton Visual Retention Test, Beck Depression Inventory-II, and Minnesota Multiphasic Personality Inventory-2. In addition, to assess the unique orthographic and grammatical impairments in Japanese aphasia, psychologists have constructed and standardized Japanese language tests, such as the Standardized Language for Aphasia (Japanese Society of Aphasiology, 1977) and the Test of Syntactic Processing in Aphasia (Fujita & Miyake, 1984). Other psychological tests developed in Japan are the Hasegawa Dementia Scale-Revised, Kyoto New NX intelligence test, and the Unidimensional Scale for Dementia.

Like the general field of psychology, neuropsychology in Japan is growing but is not as widely developed as in Western countries. An undergraduate major in psychology is available in Japanese universities, although neuropsychology is not yet a formal course in their curricula. The education and training of neuropsychologists have been established and integrated into the medical systems of Japan (Hamanaka, 1994).

Relevant studies of Japanese Americans

Despite the recent interest in understanding cultural variables in neuropsychology (Uzzell, Pontón, & Ardil, 2007), research that can shed light on the neuropsychological assessment of ethnic minorities remains relatively scarce (Puente & Perez-Garcia, 2000b; Wong, 2000).

The educational achievement of Japanese Americans is a relevant factor to address. Kitano (1962) examined the changing school achievement patterns of the Japanese Americans between 1941 and 1959. He noted that the Nisei, or second-generation Japanese Americans who maintained a stereotype of being quiet, studious, and industrious, obtained higher grade point averages than the Sansei, or third-generation Japanese Americans, while their IQs remained essentially the same. Kitano also noted an increasing participation among the Sansei in school social activities, and saw value in the evidence of acceptance and acculturation of Japanese American students.

In a longitudinal study of multiethnic children on the island of Kauai, Hawaii, Werner and Smith (1977) found significant ethnic group differences on school aptitude and achievement tests, with the Japanese obtaining higher scores than Portuguese, Hawaiian, Filipino, and mixed-ethnic students. On aptitude tests, the Japanese scores were at the national average on the verbal scale and above the national norms on the quantitative scale. The achievement tests found the Japanese students with national average reading scores and slightly above-average mathematics and writing scores. Administering the California Psychological Inventory, Werner and Smith also noted that the Japanese American youth on Kauai were from predominantly middle-class homes and appeared to value those personality characteristics that were advantageous in the classroom, for example, responsibility and need for achievement.

In a large-scale study in Hawaii, Caucasian ($n = 4,732$), Hawaiian ($n = 4,292$), Filipino ($n = 4,039$), and Japanese ($n = 3,445$) children in grades 4, 6, and 8 were administered the Stanford Achievement Test (SAT) (Brandon, Newton, & Hammond, 1987). The Japanese American children were described as high achievers whose mean SAT scores were the highest of the four racial/ethnic groups. Compared with the 1973 SAT norms, the Japanese American scores were from 0.40 to 1.06 standard deviations above the norm group.

The Hawaii Family Study of Cognition evaluated 926 European American and 368 Japanese American families with a battery of tests of verbal ability, spatial ability, perceptual speed, and visual memory (Nagoshi & Johnson, 1987). The Caucasian Americans scored higher than the Japanese Americans on the verbal and visual memory factors, but lower on the spatial and perceptual speed factors. This pattern was also noted by Lynn (1987) in his review of studies that compared Caucasian children with children from Japan. Japanese children appeared superior on visuospatial abilities but relatively weaker on verbal abilities. Nagoshi and Johnson attributed the ethnic differences to genetic factors or pervasive environmental influences independent of education and language background.

The effects of bilingualism were investigated with Japanese American children whose mothers were born and raised in Japan and fathers born and raised in the United States (Tsushima & Hogan, 1975). Aptitude and achievement tests were administered to 142 bilingual Japanese American children in grades 3, 4, and 5, and compared with 265 monolingual American children, whose parents were both born and raised in the United States. The Lorge Thorndike Nonverbal Battery revealed no differences between the bilingual and monolingual children. On the Iowa Test of Basic Skills, the two groups performed similarly at grade 3. By grade 4, monolingual children performed noticeably better than bilingual children on verbal or

language type tests, and in grade 5 the differences were even more substantial. The findings revealed a distinct pattern of increasing educational difficulty as the bilingual Japanese American children became older.

A unique effort to study the relation between ethnicity and neuropsychological test performance involved the administration of the Luria-Nebraska Neuropsychological Battery (LNNB) to Americans of Japanese ($n = 24$), Chinese ($n = 24$), Filipino ($n = 25$), and Polynesian ($n = 26$) ancestry, with no history of neurological or psychiatric disorder (Tsushima, Boyar, Shimizu, & Harada, 1995). No difference was noted between the four ethnic groups across the 11 LNNB clinical scales. The research also found that the LNNB scores of 48 Japanese American neurological patients, mostly with closed head injuries, were substantially worse than the performance of the 24 normal Japanese Americans, although the influence of age and education could not be ruled out. The authors called for similar and larger-scale neuropsychological investigations of other non-White populations.

A study of 201 nondemented Japanese American adults age 70 and older found that education, gender, and language differentially affected the results of the Consortium to Establish a Registry for Alzheimer's Disease (CERAD) neuropsychological assessment battery (McCurry et al., 2001). Those with a high school education or beyond, women, and English-speaking participants scored higher than those with less than high school education, men, and Japanese speakers on various neurocognitive tasks. The investigators observed that older Japanese American adults who spoke Japanese and followed a more traditional Japanese lifestyle had less opportunity to become familiar with certain cognitive activities and problem-solving strategies involved in neuropsychological testing. Thus, in addition to linguistic factors, their relatively lesser acculturation may have also contributed to their lower neuropsychological test results.

The CERAD Neuropsychology Battery was used to compare the baseline performance of demented and nondemented Japanese Americans, age 65 and older (Fillenbaum et al., 2005). The CERAD distinguished nondemented persons from those with dementia, but was less consistent in distinguishing levels of severity of dementia. The battery is considered useful for comparative epidemiological studies of dementia in minority groups. Mention should also be made of the Cognitive Abilities Screening Instrument (CASI), a brief screening instrument for dementia, which was administered to dementia patients and control subjects in two sites in Japan (Osaka and Tokyo) and two sites in the United States (Los Angeles and Seattle). The CASI results did not vary significantly among the four sites despite differences in language, subject characteristics, testing personnel, and settings, demonstrating its cross-cultural applicability (Teng et al., 1994).

The Minnesota Multiphasic Personality Inventory (MMPI), the most frequently used test by clinical psychologists and neuropsychologists (Camara, Nathan, & Puente, 2000), was administered to 67 Japanese American and 97 Caucasian patients diagnosed with somatization disorder or organic brain syndrome (Tsushima & Onorato, 1982). The results revealed no significant differences between the two groups, with diagnostic classifications held constant. Similar results were obtained in two subsequent investigations. The MMPI was administered to 116 Caucasian American, 72 Japanese American, and 50 mixed-ethnic Americans who were chronic pain

patients in a biofeedback therapy program (Tsushima & Stoddard, 1990). The three racial/ethnic groups did not differ on any of the MMPI scales, as well as measures of pain, forehead EMG levels, and biofeedback outcome ratings. The Minnesota Multiphasic Personality Inventory-2 (MMPI-2) was completed by 196 White and Japanese American medical patients (Tsushima & Tsushima, 2002). While the two groups of medical patients differed significantly from normal subjects on nearly all of the MMPI-2 scales, multiple regression analyses failed to show significant race differences with the MMPI-2 scales. These findings conflict with other studies of Asian American and White college students, in which Asian Americans had higher MMPI and MMPI-2 scale elevations than White Americans (Sue & Sue, 1974; Sue, Keefe, Enomoto, Durvasula, & Chao, 1996). Sue et al. (1996) submitted that when the MMPI is administered to Japanese Americans, who are the most acculturated among the Asian American groups, ethnic differences may be minimal.

In summary, relevant research on Japanese Americans is scarce but suggests that they are successful in academic achievements and do relatively better on visuospatial tasks than on verbal measures. Bilingualism and acculturation among Japanese Americans remain significant factors that could negatively affect their performance on verbal tasks. Interestingly, the MMPI scores of Japanese Americans have been found to be similar to those of Caucasian Americans, although these data have been obtained primarily in Hawaii. When MMPI studies were conducted on the U.S. mainland, differences between Asian and Caucasian Americans were reported.

Other Western tests translated into Japanese

Other Western neuropsychological tests have been translated into Japanese, which may facilitate administration to a primarily Japanese-speaking client. However, these tests do not have norms for a strictly Japanese sample, and thus test scores would have to be interpreted with caution. The Montreal Cognitive Assessment (MoCA; Nasreddine et al., 2005) is a 30-point dementia screen that incorporates tasks such as draw a clock, verbal fluency, and a mini trailmaking, along with typical orientation, attention, and memory items. The MoCA and Japanese translation is available online at <http://www.mocatest.org/>. Other instruments used for dementia screening that have been translated into Japanese include Cognistat, which was formerly known as the Neurobehavioral Cognitive Status Examination (Kiernan, Mueller, Langston, & van Dyke, 2009), and the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE), which is a nonneuropsychological measure of dementia based upon informant report (Jorm, 2004).

The Bilingual Verbal Abilities Test (BVAT) (Munoz-Sandoval, Cummins, Alvarado, & Ruef, 1998) evaluates language skills in both English and Japanese, which may provide useful information for interpreting neuropsychological test scores on Western tests with a strong language component. The BVAT consists of three subtests from the Woodcock-Johnson Revised Tests of Cognitive Ability and Language Proficiency Battery-Revised: Picture Vocabulary (58 items), Oral Vocabulary Synonyms (20 items) and Antonyms (20 items), and Verbal Analogies (35 items). The test requires a bilingual administrator or interpreter and takes

approximately 30 minutes to complete. Items are administered in English, and missed items are then administered in the client's native language. Norms range from 5 to 90.

Relevant assessment variables

Various demographic and sociocultural factors can influence the psychological test scores of ethnic minority individuals. As with the majority, the level of educational attainment plays a major role in the performance of neuropsychological tests (Lezak, Howieson, & Loring, 2004; Strauss, Sherman, & Spreen, 2006). Research with diverse populations, such as African Americans (Jencks & Philips, 1998) and Hispanic Americans (Puente & Ardila, 2000), has consistently revealed the detrimental effects of limited education in psychometric and neurocognitive assessments. According to the U.S. Bureau of the Census (2005), 72.5% of Japanese Americans are high school graduates or higher, a rate that supercedes Whites (56.6%) and other Asian Americans—Filipino (59.3%), Asian Indian (54.0%), and Chinese (52.6%). The educational background of Japanese Americans, thus, would seem to favor their performance in standardized psychological testing.

Socioeconomic levels are also positively associated with psychological test results, as greater income, higher educational background, and more cultural opportunities contribute to a person's cognitive development (Mitrushina, Boone, Razani, & D'Elia, 2005). For Japanese Americans, the median annual household income is \$51,981, as compared to Whites (\$44,687), Asian Indian (\$63,669), Filipino (\$60,570), and Chinese (\$51,444) Americans (U.S. Bureau of the Census, 2005). From a socioeconomic standpoint, Japanese Americans and certain other Asian American groups are not disadvantaged in undertaking psychological tests (Raajpoot, 2000).

Bilingualism has been found to have a detrimental effect on the performance on psychological tests, including both verbal and so-called nonverbal and culture-free tests (Harris, Tulsky, & Schultheis, 2003; Portocarrero, Burright, & Donovick, 2007). Among Whites, only 10.7% speak a language other than English at home, while among Asian Americans 45% of Japanese, 67.4% of Filipinos, 72.8% of Asian Indians, and 79.9% of Chinese speak a second language other than English at home (U.S. Bureau of the Census, 2005). Thus, for Japanese Americans, the bilingual factor may play a role in their psychological examinations, though to a lesser extent than for other Asian Americans.

Acculturation is another significant influence in the neuropsychological assessment of ethnic minorities (Wong, Strickland, Fletcher-Janzen, Ardila, & Reynolds, 2000). Acculturation in the United States is the process whereby individuals learn about and internalize the culture of America. Varied measures of acculturation, such as years educated outside of the United States, the amount of English spoken when growing up, and scores on a formal acculturation scale, have been found to be correlated with neuropsychological test performance (Manly et al., 1998; Razani, Burciaga, Madore, & Wong, 2007). The cultural factors that affect test performance include English verbal skills, familiarity with culture-specific test items, comfort with the testing situation, and test-taking attitude. Although no published acculturation

scale specifically constructed for Japanese Americans is available, clinicians can conduct a cultural assessment by administering an Asian acculturation scale (Suinn, Rickard-Figueroa, Lew, & Vigil, 1987; Yamada, Marsella, & Yamada, 1998).

Acculturation is presumably enhanced by duration of residence in America. Presently Japanese have the oldest demographics of any Asian group in the United States. For the Japanese Americans, the proportion that is foreign born (32.4%) is the smallest among all the Asian American groups, compared to the Vietnamese (79.9%), Laotians (79.4%), and Cambodians (79.1%) (U.S. Bureau of the Census, 2005). Furthermore, Caudill (1952) observed that the Japanese Americans have assimilated rapidly into American society because of the compatibility between the values of the Japanese culture, for example, industriousness, and the value system of the American middle class. As the third, fourth, and fifth generations of Japanese Americans increasingly assimilate in the United States, the cultural trend among them is to break away from Japanese traditions and values, and blend into the American cultural fabric. Kitano (1993), observing that fourth- and fifth-generation Japanese Americans readily embrace Western norms and attitudes, anticipates in the near future the possibility of nearly complete acculturation by Japanese Americans.

Acculturation may be affected by geographic location. Uba (1994), in her literature review, noted conflicting findings regarding generational differences in Japanese American ethnic identity, and attributed the disparity to the varying areas where the data were collected, that is, California, Washington, and Hawaii. Japanese Americans comprise different proportions of the population in different states, and experience different social and acculturation influences. These regional factors could affect their ethnic identity and behaviors.

Cultural experiences and practices of diverse populations may also affect test performance. Cultures vary with respect to their familiarity with one-to-one testing and values placed on speed, accuracy, test motivation, and competitiveness (Ardila & Keating, 2007). In Hispanic cultures, for example, taking psychological tests is not a common experience. For many time is valued and speed may not be vital (Puente & Ardila, 2000). These cultural patterns could influence outcomes in a neuropsychological assessment that often includes timed tasks. In view of the traditional Japanese values placed on academic performance and need for achievement, the requirements of psychological testing, with its emphasis on maximum effort in school-like tasks, are compatible with the ingrained lifestyle of the Japanese American.

Neuropsychological test scores of Caucasian and Japanese Americans: A study

The present study was developed to present comparative neuropsychological test results of Caucasian and Japanese Americans that, to date, are not available in the literature. A group of 99 patients (69 Caucasians, 30 Japanese) were administered the Halstead-Reitan Neuropsychological Battery at a medical center in Honolulu, Hawaii, to assess possible deficits in basic adaptive abilities. The patients predominantly suffered closed head injuries (94%) and were involved in motor vehicle accidents (68%) or industrial accidents (19%).

Table 7.2 Age, education, and duration of injury of Japanese and Caucasian patients

	Japanese		Caucasian		F
	M	SD	M	SD	
Age (years)	44.07	17.21	38.82	12.86	1.04
Education (years)	13.27	1.76	14.12	2.77	3.19
Duration of injury (months)	24.57	19.31	22.84	30.78	0.31

Among the 69 Caucasians were 39 males and 30 females; the 30 Japanese were comprised of 19 males and 11 females.

The mean age of the patients in this study was 40.44 years ($SD = 14.46$). The mean educational level was 13.86 years ($SD = 2.53$). The mean duration of injury was 23.35 months ($SD = 27.80$). The demographic data of the Caucasian and Japanese American patients are presented in Table 7.2. Analyses of variance (ANOVAs) revealed no significant race or gender differences with respect to age, education, and duration of illness.

The Halstead-Reitan subtests under investigation were the Category Test, Tactual Performance Test (TPT), Speech-Sounds Perception Test, Seashore Rhythm Test, Trail Making Test, Finger Tapping Test, and Dynamometer.

Results

The means and standard deviations of the 10 subtests of the Halstead-Reitan Neuropsychological Battery are presented in Table 7.3. ANOVAs were performed to examine race and gender differences on the neuropsychological tests. No race differences were found on any of the 10 subtests, that is, no F score achieved a level of significance at the Bonferroni corrected $p < .005$ level. Significant gender differences were noted on two subtests, the Finger Tapping Test and the dynamometer, in which the males obtained higher scores than the females. This gender pattern

Table 7.3 Neuropsychological subtest scores of Japanese and Caucasian patients

	Japanese		Caucasian		F
	M	SD	M	SD	
Category	36.39	29.10	37.76	20.87	0.37
TPT time	18.59	9.68	16.56	7.04	0.76
TPT memory	6.96	2.28	7.33	1.66	0.54
TPT location	3.00	2.20	3.70	2.17	0.22
Speech sounds	9.96	7.28	6.96	4.34	3.32
Seashore Rhythm	6.33	5.14	5.00	3.19	2.72
Trail Making A	30.31	10.96	30.90	11.16	0.36
Trail Making B	80.76	37.62	74.46	29.28	0.23
Finger Tapping (both hands)	76.77	18.56	75.21	15.83	0.08
Dynamometer (both hands)	108.84	52.42	119.92	43.17	3.87

has been reported in numerous research on these two measures (Lezak et al., 2004; Mitrushina et al., 2005).

Discussion

The purpose of this study was to examine the neuropsychological test scores of a group of Japanese Americans, primarily mild traumatic brain injury patients, in comparison to a similar group of Caucasian American patients. The data analysis indicated no significant differences between the two groups of patients on a variety of subtests of the Halstead-Reitan Neuropsychological Battery. Similar nonsignificant ethnic differences were found in a study that compared the scores on the Cognitive Abilities Screening Instrument of dementia and control patients tested in the United States and in Japan, although the racial composition of the U.S. patients was not specified (Teng et al., 1994).

The absence of differences between Japanese and Caucasian Americans on neuropsychological measures was not unexpected when considering the major variables that are positively associated with neuropsychological test scores. The relatively high educational attainments and socioeconomic status of Japanese Americans, along with their substantial level of acculturation, were presumed to have a favorable impact on their performance in neuropsychological testing. The present findings suggested that race/ethnicity specific norms, such as those proposed by some for African Americans (Byrd et al., 2006) and Hispanic Americans (Cherner et al., 2007), may not be necessary or appropriate for Japanese Americans.

The present study has notable shortcomings. First, the relatively small number of participants representing the Japanese American group compromised the statistical power of the data analysis and limited any generalizations that can be derived from the data. The number of subjects in both racial groups falls short of the minimum of 100 subjects (or 10 per subtest) needed in each group to assess adequately the 10 subtest scores of the Halstead-Reitan Neuropsychological Battery (Greene, 1987). Without substantial sample sizes, the present findings must be considered highly tentative.

The Japanese American participants were predominantly Sansei or Yonsei, but specific details regarding their generational levels were not obtained. The study also lacked an objective measure of acculturation, for example, the Suinn-Lew Self-Identity Acculturation Scale (Suinn et al., 1987), which would have better identified the sample of Japanese American patients and provided further insight regarding their neuropsychological test performance.

The sample of Japanese Americans in this study was only from Hawaii. It would be desirable to obtain neuropsychological test scores of Japanese Americans in other geographic locations, as different social and environmental factors may produce different neuropsychological test results (Uba, 1994).

Maxims for the neuropsychologist

While Japanese Americans have acculturated in varying degrees to Western society, they continue to retain their own unique identity, social behaviors, and personality

characteristics (Vernon, 1982; Marsella, 1993). Their original culture persists in their values, such as deference to authority, as well as in their preference in foods and their ethnic artistry, like the tea ceremony and flower arrangement (Kitano, 1993). To the extent that certain Japanese Americans continue to identify with the cultural patterns of their ancestors, the following maxims are offered for the neuropsychologist evaluating a Japanese American patient:

1. Like other Asians in America, *the Japanese American is generally hesitant to seek psychological assistance* (Rogers & Izutsu, 1980; Fujii, Fukushima, & Yamamoto, 1996). Even among the more acculturated, the possibility of social stigma and the sense of shame may discourage or even prevent one from obtaining mental health consultation. In a psychological examination, the Japanese American patient, out of embarrassment or guilt, may be reluctant to admit to psychological symptoms. Accordingly, the examiner probably needs to encourage the patient to elaborate if a general or open-ended question is asked, or the examiner may have to ask more specific and direct questions.
2. Older Japanese Americans as well as recent immigrants from Japan are expected to maintain the more traditional Japanese characteristics, compared to the younger generation (Wong, 2000). *With the more traditional Japanese, clinicians should address them more formally* ("Mr. or Mrs. Yamamoto" rather than "Hideki" or "Alice"), as they tend to be more formal than Westerners (Hays, 1996). If they are bilingual, the psychologist should speak slowly, listen patiently, and exhibit confidence without being patronizing. It is more important to show care and concern than to be very friendly or humorous. The less acculturated patients may be unfamiliar with neuropsychological testing and contemporary treatments, such as speech, occupational, and psychological therapies. They may need more explanation and encouragement to participate in these important activities.
3. *Japanese Americans hesitate to speak up in the presence of doctors*, in deference to their position of authority (Matsui, 1996). The Japanese patient is known to show respect and deference by quietly listening and not openly disagreeing with a doctor. Thus, he or she may avoid asking for explanations of a diagnosis, or reasons for a test or treatment, even if he or she does not fully understand the nature of his or her condition. It behooves the psychologist to provide a full and detailed explanation of the neuropsychological problem, encourage questions, and inform the client of his or her right to seek a second opinion or refuse treatment.
4. *It is essential to understand the nonassertive and indirect speaking manner of the Japanese American*, who has been socialized to be respectful by being agreeable and avoiding direct expression of opinions (Homma-True, 1997; Wong & Fujii, 2004). Thus, in a neuropsychological examination, he or she may nod or answer yes when he or she does not fully understand the question, or even when he or she is definitely in disagreement (Kitano,

1993). Japanese Americans may respond in a seemingly tangential manner that could be misidentified as a language impairment or a thought disorder. The Japanese indirect speaking style can be puzzling and frustrating to the examiner who wants direct and pertinent answers.

5. The Japanese, like other Asians, emphasize the family unit. Thus, *the practitioner needs to include the patient's family* and involve them in the explanation of the neuropsychological problem and the treatment recommendations (Fujii et al., 1996). While there may be a trend away from the close-knit family system toward Western individualism, the clinician must be aware of this distinct Asian value.
6. In view of the premium attached to school achievement and career advancement among Japanese Americans, *brain injury and its accompanying limitations on career progress may result in turmoil* for the individual because of overwhelming disappointment and shame. The neuropsychologist needs to appreciate these strong cultural values and be prepared to offer acceptable career alternatives that will save face for the impaired person.
7. For many Japanese, *reading and writing skills in English are more developed than speaking English*. Thus, when evaluating verbal skills for some Japanese immigrants, it may be useful to have them read the item and respond by writing.

Case sample

Given that U.S. norms would be appropriate for the vast majority of Japanese Americans, we selected a case of a Japanese national who speaks little English visiting his daughter in America. This case may illustrate how to approach more challenging cases in which the client has a poor command of English and is less acculturated.

Mr. Kono is a 74-year-old Japanese male who has lived his entire life in Osaka, Japan. According to Mr. Kono's wife, Shizuko, her husband began demonstrating forgetfulness about six months ago, which has become progressively more frequent. He often misplaces things and will ask the same questions more than once. Word-finding problems are also apparent. Mr. Kono's activity level has been significantly reduced with poor initiation. Normally a very sociable man, he has become more reclusive and often refuses to leave the home. Shizuko's concerns became more pronounced when she witnessed her husband talking to a bird outside his window.

Despite these behaviors, Mr. Kono continues to be independent in his activities of daily living and will do his routine home chores. His wife has taken care of shopping and bill paying, and thus he does not have these duties.

Mr. Kono is a former president of an accounting firm who has a bachelor's degree in business. He was forced to retire about a year ago due to political maneuverings by his former protégé. Although Mr. Kono never complained, his wife suspects that the manner in which her husband was forced into retirement was highly stressful for him. Shizuko was worried, but did not directly address her concerns with her husband, as he would become very angry when the topic of behavioral changes was brought up. She consulted with their daughter Michiko, who was living in Hawaii

after marrying a U.S. citizen 10 years ago. Michiko persuaded her mother to bring her father to Hawaii for a visit with the hope that she could persuade him to get an evaluation. It was Michiko who made the arrangements for a neuropsychological evaluation for possible dementia or depression. Mr. Kono agreed to see "the American doctor" reluctantly, only after Michiko insisted that both he and his wife were to be examined for health status.

Medically, Mr. Kono sustained congestive heart failure about six months ago and was prescribed digoxin for this condition. He was also taking a diuretic for hypertension. Mr. Kono used to drink a small bottle of sake per day (equivalent to about two shots of hard liquor). He smoked a pack a day since he was 20 years old and quit after his heart attack. His eating is fine, but he has gained about 7 pounds due to a reduced level of exercise.

Mr. Kono was interviewed through a professional interpreter. He was neatly groomed and casually attired. His countenance was stoic, which is common for older Japanese males, although it could also be suggestive of depression. Mr. Kono answered questions politely. He reported that his mood was "good" and everything is fine. To increase Mr. Kono's comfort level, his family was allowed to stay during the interview. Later, when Mr. Kono was using the restroom, they commented on how "well behaved" he was during the interview.

Mr. Kono was then administered a short battery consisting of the following instruments, which have either been translated and normed on a Japanese population or in which studies indicate are valid for Japanese: the Cognitive Abilities Screening Instrument (CASI), a multidimensional cognitive screen that has been translated into Japanese and normed on samples in Osaka and Tokyo (Teng et al., 1994); the Wechsler Memory Scale-Revised, which was translated and validated in Japanese (Sugishita, 2001); and an 11-question version of the Centers for Epidemiologic Studies Depression Scale (CES-D) questionnaire that has been used with Japanese Americans (Oba et al., 2009). The Clinical Dementia Rating (CDR), a dementia scale based upon informant observation, was also administered (Hughes, Berg, Danzinger, Coben, & Martin, 1982).

Given Mr. Kono's educational level, particularly for his cohort, and occupation, his premorbid functioning was estimated to be at least in the average range and probably higher. Mr. Kono earned an overall CASI score of 73, which was a borderline level score based upon Osaka norms. Strengths were demonstrated in orientation, attention, and visual constructions, while impairments were demonstrated in concentration/mental manipulation and verbal memory tasks, the latter primarily for encoding with adequate retrieval. Abstractions, animal fluency, and visual memory were below average. On the CDR, Mr. Kono was rated as having questionable impairments in memory, orientation, judgment, and problem solving, and in performing household chores and hobbies, and no impairment in personal care. His score on the CES-D was elevated (7), but not in the depressed range.

Mr. Kono's scores and history were interpreted as a differential between mild cognitive impairment and mild dementia. Potential contributors included dementia of the Alzheimer's type, an adjustment disorder with depressed mood, or medication effects, possibly due to digoxin, that can cause confusion, apathy, depression,

as well as visual hallucinations. It was recommended that Mr. Kono be evaluated by a geriatrician and undergo a dementia workup. Family followed up on these recommendations upon returning to Japan. They later reported that a dementia workup was negative with the exception of mild general atrophy on a CT. His digoxin was discontinued and within weeks, Mr. Kono was functioning near baseline. However, his cognition slowly declined over the next three years and he was later diagnosed with dementia of the Alzheimer's type.

Mr. Kono's case is common in traditional Japanese families. He was very reluctant to seek help for a possible mental problem due to shame and stigma. In traditional Japanese culture, the wife does not confront the husband on important issues. Indeed, their Americanized daughter had to make arrangements for testing. In Ms. Kono's case special care was taken to ensure comfort with the procedure by describing the test as a preventative measure that is popular in America. In addition, family was allowed to stay in the office during the evaluation.

Given that Mr. Kono is a Japanese national, test selection was based upon those normed and validated in Japan versus tests validated on Japanese Americans. A problem was that translations of these tests were not available; thus, the interpreter had to translate them. Although not an ideal situation, this was noted in the report, and the possible negative effects on reliability and validity. An estimate of Mr. Kono's premorbid functioning was based upon his education level and high socioeconomic status in a country with a strong education system and economy comparable to the United States. Thus, some confidence could be made that his premorbid functioning was at least average and likely higher. Diagnosis was based upon a multimethod approach as recommended by Fujii et al. (2002, 2005), with cognitive functioning based upon both neuropsychological tests and informant-based questionnaires. In Mr. Kono's case, both evaluation sources were converged. Finally, given that traditional Japanese are reluctant to admit psychological or mental problems, despite denial of depressive feelings and a CES-D score in the normal range, a depressive disorder could not be entirely ruled out and was kept in the differential.

Conclusion

In this chapter, we provided a brief history of the Japanese in America, highlighted the presence of neuropsychology in Japan, summarized the literature regarding relevant variables in the neuropsychological assessment of the Japanese American patient, and presented the comparative results of Japanese and Caucasian American patients who underwent a comprehensive neuropsychological examination. Finally, we offered several maxims regarding the neuropsychological assessment of Japanese Americans, and described a neuropsychological case of testing with an elderly Japanese male who spoke little English. Any chapter dedicated to the description of a particular ethnic group is subject to err on the side of overgeneralization. These characterizations can leave the wrongful impression that there is a homogeneous Japanese American culture that is vastly different from that of other Americans. Cross-cultural experts warn that between-group differences comparing one ethnic

group with others are sometimes emphasized, while equally wide or even wider within-group differences are overlooked (Suzuki & Valencia, 1997; Okazaki, 2000). We need to keep in mind the wide spectrum of Japanese Americans who are bilingual and bicultural, along with the fourth- and fifth-generation Japanese Americans who are highly acculturated into the Western world, as well as recent immigrants whose English-speaking abilities are highly variable.

The discussion of Japanese Americans presented here is intended to increase the knowledge and understanding of neuropsychologists who may be otherwise unfamiliar with the psychological and behavioral characteristics of Japanese Americans. Clinicians are cautioned to apply these broad descriptions with sensitivity and judgment in their interactions with individual Japanese Americans.

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Series preface

One of the major goals of our book series *Neuropsychology, Neurology and Cognition* is to facilitate the application of neuropsychological knowledge to clinical populations. In editing *The Neuropsychology of Asian Americans*, Dr. Daryl Fujii provides the basis for application of neuropsychological principles and practices to the fastest-growing major racial/ethnic group in the United States in terms of percentage growth. According to the 2000 U.S. census, Asian Americans made up 4.3% of the U.S. population, showing a 63% increase from data gathered in the 1990 census. Asian Americans thus constitute a significant and increasing base of need for clinical services.

In this volume, multiple authors address optimal parameters for providing clinical services to subgroups of Asian Americans in terms of clinical interaction, parameters of the testing context, and suggestions for providing the results of neuropsychological assessment in ways which are culturally competent and sensitive. Even more importantly, the chapters provide a central repository of listing of available resources for each subgroup ranging from Cambodian Americans, to Laotian Americans, to Hmong Americans. Each group, of course has a rich and unique cultural history and context which must be taken into account for competent and ethical clinical practice. The second part of this ground-breaking text addresses the state of knowledge and practice of neuropsychology within the various Asian countries and cultures, leading the reader toward an informed journey of understanding and further exploration of issues and possibilities in expanding their experience with Asian American Neuropsychology.

I welcome this valuable contribution our series and highly recommend *The Neuropsychology of Asian Americans* to anyone who is privileged to interact with the Asian American community in a clinical, research, or scholarly context. It will be an interaction which increases in richness and frequency with each passing decade.

Linus A. Bieliauskas
Ann Arbor
May, 2010

9 Neuropsychology of Laotian Americans

Daryl Fujii

Brief history

Laos is a Southeast Asian country that is slightly larger than the state of Utah. It is bordered by Thailand, Cambodia, Myanmar, China, and Vietnam. The northern part of the country is mountainous, while much of the southern part is lowlands, except for the southeast border with Vietnam, which is also mountainous. Historically, Laotians have been farmers, although there are some natural resources, such as copper, gold, and wood. Many, particularly in the less fertile mountain areas, have been sustenance farmers engaging in slash-and-burn farming.

Laotians are diverse in ethnic identity. The culturally dominant group is the Lao or Lao Loum, who live in the lowlands. The highlands are inhabited by the Hmong or Lao Sung, and the Mien or Hmong-Yao. The Lao Theung, comprised of the Mon-Khmer and Viet-Muong tribes, live in the mid-slope region. This chapter will focus on the Lao.

Laotians are descendants of the T'ai people of southern China, who migrated to Laos in the sixth century. Laos was originally part of Cambodia. It became an independent country in 1353 under Prince Fa Ngum, who established Lan Xang, or "The Kingdom of a Million Elephants." Under Prince Fa Ngum, Laos enjoyed great power and prosperity and extended into most of modern Thailand. Luang Prabang was the nation's capital until 1563, when King Setthalhiralh moved the capital to its current location at Vientiane (Bankston, 2000). Laos subdivided into three separate kingdoms after the death of King Souvigna Vongsa in 1694. By the mid-1800s, most of the weakened country, with the exception of Luang Prabang, was taken over by Vietnam and Thailand. A few decades later, the French colonized Southeast Asia, controlling Vietnam, Thailand, and Laos at the end of the nineteenth century (Bankston, 2000). French occupancy was briefly interrupted during World War II, when Japan conquered much of Indochina. When the Japanese surrendered in 1945, Laos claimed independence under the *Lao Issara* (Free Laos) banner. However, this movement was short lived as the French reoccupied the country by early 1946.

Laos regained independence in the 1954 Geneva peace conference after France was defeated by the Vietnamese Communists (Wikipedia, 2009a). The first years of Laotian independence were characterized by high instability, with rivalries between the neutralists, right wing, left wing, and future prime minister Kaysone Phomvihane's

group. Elections were held in 1955, and the first coalition government was headed by neutralist Prince Souvanna Phouma in 1957. This government collapsed the next year and in 1960, when Captain Kong Lae staged a coup to reform the neutralist government. Prince Souvanna briefly regained control only to be driven out by rightist forces led by General Phoumi Nosavan later that year (Wikipedia, 2009b).

A second Geneva conference held in 1961–1962 reestablished Laos' independence and also its neutrality in the Indochina war being fought in Vietnam. The agreement was not binding and civil war ensued from 1962 to 1975 between the Royal Lao Government, supported by the United States, and the rebellious Pathet Lao, supported by the Communist North Vietnamese.

The main battlefield was along the Ho Chi Minh trail, which was a supply lifeline for the North Vietnamese while infiltrating South Vietnam. The Pathet Lao supported the North Vietnamese to protect this strategic trail, while the Royal Lao Government Army, lead by Hmong leader General Vang Pao, attempted to capture this area (Wikipedia, 2009b).

The United States eventually withdrew from Vietnam in 1973, and South Vietnam fell to the North in April 1975. With the backing of North Vietnam, the Pathet Lao, led by Kaysone Phomvihane, gained control of the coalition government and formed the Lao People's Democratic Republic (LPDR). The LDPR immediately imprisoned many members of the previous government and Royal Lao Army in "reeducation camps." These policies prompted about 10% of the population to leave the country, and many initially settled in Thai refugee camps before moving on to other countries. Early Laotian immigrants to the United States consisted of former government administrators, soldiers from the royal army, and shopkeepers. Later immigrants were less educated and included farmers and villagers (Bankston, 2000).

Laotian population demographics in the United States

According to the 2000 U.S. census, there were 167,792 Laotians living in the United States, which constituted 1.6% of the total Asian American population (Reeves & Bennett, 2004). About 68.1% of Laotians are foreign born, of which 45.6% have become naturalized citizens. The vast majority of Laotians immigrated during the 1980s: 16.9% immigrated before 1980, 65.7% from 1980 to 1990, and 17.4% from 1990 to 2000 (Reeves & Bennett, 2004). Given the high percentage of immigrants, it is not surprising that many are not proficient in English. In Laotian households, 92.9% speak a non-English language, while 40.1% report speaking English "very well." It is estimated that 26.3% of Laotian households meet criteria for being linguistically isolated (Yang, 2004). Laotian households only speaking English are reported to be 7.2% (Reeves & Bennett, 2004).

Settlement in the United States has been selective to a few states, with almost half living in California and the west. States with the largest number of Laotians are as follows: (1) California, 55,456; (2) Texas, 10,114; (3) Minnesota, 9,940; (4) Washington, 7,974; (5) North Carolina, 5,313; (6) Illinois, 5,235; (7) Georgia, 4,531; (8) Wisconsin, 4,469; (9) Oregon, 4,349; and (10) Tennessee, 4,214 (Pfeifer, 2001).

Similar to other Asian American ethnic groups, Laotians are located in urban areas (96%) (Bankston, 2000).

The Laotian American population is more youthful than the Asian and general population. The 2000 U.S. census data reported the median age of Laotians as 26.1, in comparison to all Asians (33.0) and the total population (35.4) (Reeves & Bennett, 2004). In the 2000 census, 34.3% of Laotians were under 18 years of age, while 3.4% were older than 65.

About 53.1% of Laotians over age 15 were married (Reeves & Bennett, 2004). As with Asians in general, Laotians (10.5%) are less likely to be separated, widowed, or divorced than the general population (19%), and have more children, with average household sizes estimated at 4.23 (U.S. average is 2.59). Despite having larger households, the median family income for Laotians (\$43,542) is among the lowest for Asians (\$59,324), and lower than the general population's (\$50,046). There are fewer Laotians (male, 65.5%; female, 56.3%) participating in the workforce than the general population (male, 70.7%; female, 57.5%), and a lower percentage of Laotians (13.4%) are employed in management, professional, or related occupations than all Asians (44.6%) or the general population (33.6%). Given these figures, it is not surprising that a high percentage of Laotians (18.5) live below the poverty level (total U.S. population, 12.4) (Reeves & Bennett, 2004).

History of education in Laos

Education in Laos was traditionally provided by monks at Buddhist wats until the mid-twentieth century. Most villages had a wat, and only males were allowed in these schools. Curriculums included reading Lao and Pali scripts, arithmetic, religion, and other social subjects. When the French colonized Laos, they established a secular education system primarily for the elite in urban centers. Members of the royal family and households, and children of Vietnamese immigrants who were sent to Laos to oversee the country, constituted the majority of these students. The education was patterned after the French system, which was divided into primary and secondary educational systems. Courses were taught in French from the second or third grade. Postsecondary education was unavailable in Laos, and advanced students had to travel to Vietnam and Cambodia for specialized training, or to France for university-level studies (Wikipedia, 2008).

Laos developed its own educational system when it gained independence in the 1950s. The Pathet Lao provided instruction in Lao, and the Royal Lao Government (RLG) implemented a Laotian curriculum in the 1960s. The educational system grew steadily, and by 1970 about a third of the civilian employees of the government were primary school teachers, although most were poorly paid and trained. At this time, about 36% of primary school-age children, or approximately 200,000 students, were enrolled in the RLG schools (Wikipedia, 2008).

When the Lao People's Democratic Republic (LPDR) was established in 1975, one of the goals was to institute a universal primary educational system by 1985. To implement the plan, the government built and staffed schools within each village. However, due to limited resources, most schools only had one or two grades,

teaching materials were sparse, and classes were held irregularly, overcrowded, and conducted for only a few hours per day by one or two teachers in thatched huts. Due to the paucity of resources, most students took about 11–12 years to complete a primary school curriculum. Repetition rates ranged from 40% for the first grade to 14% for the fifth grade. Dropout rates were also high, with 22% of first-graders leaving before the second grade and a 55% dropout rate for all students (Wikipedia, 2008).

Quality of education and enrollment varied across urban–rural areas, gender, and ethnicity. Enrollment and education quality were higher in urban areas, where there were more resources and an education was more valued than in rural areas, where farming was the major industry. Boys were more likely to attend schools than girls, with an initial 37% female enrollment that increased to 44% by 1989. In addition to urban–rural factors, due to language barriers, Lao from the lowlands had higher rates of enrollment than their Hmong counterparts, who spoke a different language and did not have a literacy tradition. Enrollment of Hmong girls was even lower, at about 26% (Wikipedia, 2008).

Secondary educational schools also expanded under the LPDR, but are much less prevalent than primary schools. By 1992–1993, only about 130,000 students were enrolled in postprimary educational programs, including secondary schools, vocational programs, and teacher training schools. Secondary education institutions are concentrated in urban centers, with most located in provincial capitals and to a lesser extent district centers. The vast majority of secondary education students come from the cities, as students from rural areas must board in makeshift facilities (Wikipedia, 2008).

Postsecondary educational institutions are even scarcer, with the majority of schools located in the capital of Vientiane. Institutions of higher learning include the National Teacher's Training School at Dong Dok, the Irrigation College at Tad Thong, the Agriculture College at Na Phok, the National Polytechnic Institute, and the University of Medical Sciences. The academic rigor of these universities lags behind other Asian countries, as none of the Laotian institutions are ranked in the top 100 Asian universities (Webometrics, n.d.). To supplement the limited availability of local institutes of higher learning, between 1975 and 1990, the LPDR granted over 14,000 scholarships for study in Socialist countries, with over 7,000 educated in the Soviet Union, 2,500 in Vietnam, and 1,800 to East Germany (Wikipedia, 2008).

Another educational goal of the RLG was to increase literacy in adults. A national adult literacy campaign was initiated in 1983–1984 that recruited educated citizens to teach basic reading skills to over 750,000 adults. National literacy increased to about 44%. Rates were much higher for adults between the ages of 15 and 45, with 92% of men and 76% of women reported to be literate in 1985. Unfortunately, due to the lack of reading materials, particularly in rural areas, many newly literate adults lost their proficiency after a few years (Wikipedia, 2008).

Although still a work in progress, the LDPR's attempts to expand the educational system in Laos have been successful, as evidenced by a steady increase in enrollment and literacy rates. Primary school enrollment increased from 100,000 students in 1959, to 317,000 in 1976, to 603,000 in 1992 (Wikipedia, 2008). The youth literacy rate (literacy defined as "with understanding, both read and write a short simple

statement on everyday life") has increased from 62.6% in 1980 to 78.5% in 2004. Literacy for Laotian adults increased from 33.2% in 1980 to 60.2% in 2003, while for males it increased from 74.4% in 1980 to 81.1% in 2003 (Globalis, n.d.).

Education history in the United States

In comparison to the general population and other Asians, Laotian Americans are poorly educated. About 49.6% have less than high school, 24.4% are high school graduates, 18.3% completed some college, while only 7.7% earned a bachelor's degree or higher (Reeves & Bennett, 2004). Low academic achievement for Laotian adults is not surprising given that 68.1% of Laotians are foreign born and the lack of educational opportunities in Laos. Unfortunately, the limited available data also indicate that Laotian children experience significant difficulties in American schools (Yang & Niedzwiecki, 2003).

There is a paucity of studies with a specific non-Hmong Laotian American population, and thus little hard evidence of reasons for the poor academic achievement of Laotian Americans. Yang and Niedzwiecki (2003) propose several potential causes. First, a significant number of Laotian students have limited English proficiency, which makes it difficult to learn in schools where English is the medium of communication. Second, systematic miscommunication between students, parents, and teachers can affect a Laotian student's ability to learn. Parents who are poorly educated and lack adequate English skills are ill-equipped to serve as educational mentors to their children or communicate concerns with teachers. In addition, differences in expectations and values between foreign-born parents who emphasize cultural traditions and American-born children who focus on assimilation exacerbate the generation gap between parents and children. Third, Laotian students experience discrimination from policy makers and teachers. Policy makers who are removed from the classroom tend to overlook the special needs of Southeast Asians due to the model minority image of Asians. Thus, much-needed programs for Southeast Asians are not adequately funded or supported. Simultaneously, teachers who are closer to the Laotian students may feel they are not college material and indirectly communicate this assessment of their ability to them. This powerful combination can result in Laotian children giving up due to an internalization of their learning problems. Finally, Laotian students may experience widespread feelings of alienation from mainstream schools. Very few schools have sufficient numbers of Southeast Asians on staff, or curriculum to assist the students in understanding themselves and their culture.

Pertinent cultural variables

Family structure

In a traditional Laotian family, the family is headed by the husband or oldest male, who is the primary decision maker, although elders of both genders are highly respected (Keovilay & Kemp, n.d.). The man represents the household in community

affairs, while the woman runs the household and oversees the finances. In America, these roles are less well defined, as it is common for Laotian women to work, and thus many Laotian men assist with household tasks, while women can also be active in the community (Bankston, 2000). Children are expected to remain quiet and respectful in their interactions with elders and visitors (Keovilay & Kemp, n.d.).

The most common family arrangement in the United States is the nuclear family living in close proximity to extended family. Extended family is important for both social and financial support (Bankston, 2000).

Religious values

Religious beliefs of most Laotians appear to be a combination of Theravada Buddhism and animism (Keovilay & Kemp, n.d.). All Buddhists equate life to suffering caused by one's desires, and that suffering in one's current life results from misdeeds in previous lives. Two core Buddhist values are harmony and balance, and conflicts are to be avoided at all costs. Theravada Buddhism is a more individualistic denomination that stresses personal development and individual good behavior to attain enlightenment before helping others. Thus, males are strongly encouraged to become Buddhist monks for a brief period (World Culture Encyclopedia, 2008).

Many Laotians also believe in spirits, or *phi*. Nature is filled with spirits that inhabit places such as rivers, rice fields, or groves of trees. Laotians worship *phi* by offering them food in outdoor shrines (Keovilay & Kemp, n.d.). A small number of Laotians have converted to Protestant Christianity, particularly in areas where the Laotian community is small (Keohavong, 1996).

Illness beliefs and traditional healing practices

Laotian beliefs about illnesses are directly related to their religious and spiritual beliefs. For example, illnesses can be caused by malevolent spirits or result from an offensive deed done to a deceased ancestor (World Culture Encyclopedia, 2008; Keohavong, 1996). Another common belief is that each person has 32 spirits, or *kwhan*, associated with different parts of the body. Illnesses occur when a spirit abandons the person, resulting in an imbalance in spirits (De Voe, 2009). Spirit loss is often associated with travel, as spirits can be left behind. Similar to other Southeast Asians who are influenced by Chinese medicine models, balances among the four human elements, wind, water, earth, and fire, are important for health. Of these elements, wind is the most salient for medical illnesses (Graham & Chitnarong, 1997).

Traditional Laotian healing practices include different forms of massages and herbal treatments, of which the latter can be taken orally, inhaled through the mouth or nose, or applied directly to wounds (Keohavong, 1996). If illness is believed to result from spirit loss, a family member, elder, or *acharn* (teacher/healer) will pray to the spirits of the different body parts to return to the body. When health is returned, the *acharn* may reward the returning spirit with rice and chicken, which is given to the patient (Keovilay & Kemp, n.d.).

Laotian Americans primarily look to family and community for support, and traditional treatments are tried first. If these interventions are not successful, the family will take the person to a Western clinic or hospital. In many cases, traditional practices continue even if the ill person is being treated with Western medicines. In general, Laotians focus on treating acute illnesses. Prevention or health promotion is not valued (Keovilay & Kemp, n.d.).

Mental health issues

Many Laotians experienced significant trauma during the Vietnamese war and political aftermath. Sources of trauma included leaving the country, living in refugee camps, and immigrating to a foreign country. In a study evaluating mixed Indochinese Americans living in California, Gong-Guy (1987) reported that 50% of the Laotian population demonstrated a need for psychiatric services, while 10% of the entire sample met criteria for posttraumatic stress disorder (PTSD). Kinzie and Leung (1996) reported that Laotians may experience depressive symptoms due to loss of country, social position in their home country, and difficulties due to language barriers.

Despite a need for treatment, Laotians are generally reluctant to seek psychiatric services due to shame and fear of stigmatization to the family. In Laos, psychiatrists only treat the insane (Keohavong, 1996). Thus, Laotians will only seek treatment for mental illness if behaviors of a family member are impossible to ignore, the person is too difficult to manage, or families experience significant levels of distress (Kinzie & Leung, 1996). For example, typical symptoms of PTSD, such as nightmares, startle reactions, irritability, and reexperiencing traumas, are not worth mentioning to physicians, and many do not seek treatment for this disorder (Bromley & Chhem Sip, 2003). Emotional problems are generally manifested in vague and multiple somatic complaints, such as poor sleep, pain, gastrointestinal problems, or physical weakness; thus, Laotians who do seek treatment by Western practitioners are often seen by medical doctors (Kinzie & Leung, 1996).

Similar to medical illnesses, Laotians believe that there are numerous causes of mental illness, including spirit loss (Keovilay & Kemp, n.d.), supernatural causes, physical causes, social problems, and psychological causes (Westermeyer, 1988). Factors are generally outside the control of the individual (Westermeyer, 1988).

Health issues

Refugees from Southeast Asia are at high risk for numerous illnesses, including nutritional deficits, hepatitis B, tuberculosis, parasites, malaria, HIV, Hansen's disease, and PTSD (Keovilay & Kemp, n.d.). In a California study, Laotian men were found to have high rates of lung and liver cancer, while the most common cancer found in Laotian women was cervical cancer. Compared to other ethnic minorities, Laotians had the highest teen pregnancy rate, as 19% of pregnant Laotian women were teenagers (Asian and Pacific Islander American Health Forum, n.d.).

Neuropsychological literature

The neuropsychological literature on Laotians is sparse and focuses on test scores with children. Boivin et al. (1996) administered the Kaufman Assessment Battery for Children (K-ABC) and Tactual Performance Test (TPT) with two samples of Laotian children ages 5–12. The first sample was comprised of urban children of medical staff and administrative professionals in Vientiane ($n = 24$) whose mothers and fathers had mean education levels of 13.4 ($sd = 3.56$) and 14.7 ($sd = 2.3$) years, respectively. The other sample consisted of children living in Nai Sai Tong, a rural village ($n = 22$). Their mothers' mean level of education was 7.6 ($sd = 5.3$), while their fathers' education level was $M = 8.8$ ($sd = 5.0$).

Results indicate that the urban sample scored significant on all global scales and subtest scores (see Table 9.1 for mean scores). Subtest scores for the urban sample were generally within the average range, with the exception of performances on Number Recall, a test similar to Digit Span, that fell within the very superior

Table 9.1 K-ABC and TPT scores for urban and rural Laotian children

Measures	Urban ($n = 24$)		Village ($n = 22$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Kaufman Assessment Battery for Children (K-ABC)				
Global scales				
Sequential	123	8.4	107	11.1
Simultaneous	108	13.9	87	13.0
Nonverbal	111	13.2	90	11.7
Mental Processing	116	12.4	94	12.7
Sequential subtests				
Hand Movements	11	1.6	8	2.3
Number Recall	17	1.8	16	2.1
Word Order	13	2.3	9	2.4
Simultaneous subtests				
Gestalt Closure	9	2.7	5	2.6
Triangles	13	2.8	9	3.8
Matrix Analogies	11	2.6	8	2.4
Spatial Memory	11	2.4	10	2.6
Photo Series	11	3.1	7	6.6
Tactual Performance Test (TPT)				
Dominant hand ^a	101.2	125.1	107.0	92.2
Nondominant hand	60.3	61.2	71.8	64.9
Both hands	26.8	19.4	39.2	36.1
Memory	4.3	1.7	3.4	1.6
Location	3.4	1.8	2.1	1.6

Source: Boivin, M., et al., *Neuropsychology*, 10, 588–599, 1996.

^a Values represent time per block.

range, and high average level scores on Word Order and Triangles. The rural sample also generally performed within the average range, although within the lower levels. Exceptions include a superior level score on Number Recall, a low average performance on Photo Series, and a borderline level score on Gestalt Closure.

The finding of stronger sequential versus simultaneous processing was also demonstrated in a Laotian American immigrant sample in Texas ($n = 70$) (Utairatanakit, 1987). The score for the Lao immigrant children on the K-ABC Sequential Composite was $M = 100.8$ ($sd = 13.6$), while that for the Simultaneous Composite was $M = 101.6$ ($sd = 11.4$). Although there were no differences between these scores, the researcher indicated that 39/70 children had limited English proficiency, and thus projected that the Sequential Composite would have been higher if the test had been administered in Lao.

Conant et al. (2003) compared K-ABC Sequential processing subtests scores of the aforementioned Laotian sample with a sample of children from rural southeast Michigan. Using an ANCOVA to control for age and education, differences were found in the Hand Movements subtest $F(3, 96) = -4.55, p = .005$, with the American sample performing significantly stronger than the Laotian sample, and Number Recall, which indicated significantly stronger Laotian performances, $F(3, 96) = 30.87, p < .001$. Group differences on the Word Order subtest approached significance, with stronger performances for the American sample, $F(3, 96) = 2.68, p = .051$.

On the TPT, the urban and village samples performed similarly on trials for dominant, nondominant, both hands, and memory. A significant difference was found for location ($p = .02$), with the urban sample scoring higher than the village sample. It is difficult to compare the performances of the Laotian children with American norms, as the ages of the Laotian sample ranged from 5 to 12, whereas American norms are based upon a specific age. With this caveat, the memory and location scores for the urban sample ($M = 8.3$ years, $sd = 1.9$) were very similar to norms for eight-year-old American children (memory, $M = 4.44, sd = 1.2$; location, $M = 3.22, sd = 1.7$) (Nussbaum & Bunner, 2009).

Recommendations

Due to the paucity of neuropsychological norms on an exclusively Laotian sample, Western tests would most likely not be valid to estimate actual cognitive functioning. An exception would be use of the K-ABC and possibly TPT with children under 12. The lack of norms would indicate that for a majority of adult cases, a formal neuropsychological evaluation may not be possible. Still, a conceptual impression from a multimodal assessment based upon social and functional history from client and collateral sources, behavioral observations, medical records, including neuroimaging if available, and history of progression of cognitive and behavioral changes, in comparison with expectations from neurological disorder, can still be useful for making diagnoses and recommendations for improving functioning.

This type of assessment based on history and presentation would be insufficient to determine subtle cognitive changes from mild brain injuries. However, given Laotian

culture, in which behavioral or emotional problems are not brought to the attention of professionals until it is very disturbing to family or significantly affecting finances, it is highly likely this type of evaluation can be useful, as for many Laotian Americans their deficits would be noticeable by the time of referral. Although ideally a Laotian American neuropsychologist would perform the evaluation, due to the paucity of these professionals in combination with the pressing need for such an evaluation when a referral is finally made, it is likely a non-Laotian American would be asked to perform a neuropsychological evaluation on a Laotian American. The following are conceptual issues to consider when providing neuropsychological consultation to Laotian Americans:

Child

1. Western tests are most relevant for Laotians born and educated in the United States and for whom English is their primary language. However, many Laotian American children are bilingual, as Lao is spoken in over 92% of households (Reeves & Bennett, 2004). If English is not the child's primary language, then verbal tests would underestimate verbal abilities. Thus, the examiner would have to determine the exposure to and skill level of English. The following are questions to determine English exposure history:
 - a. Is Lao the primary language spoken at home? If so, when did the child learn English? Is Lao the primary language spoken with friends? In which language is the child most comfortable conversing?
 - b. Is the child enrolled in English as a Secondary Language (ESL) classes? What is the child's academic achievement in reading and language? Is there a significant discrepancy in English versus math skills?
 - c. If Lao is preferred, consider an interpreter. However, since most Laotian American children are bilingual, you should qualitatively assess their English skills through conversation. This evaluation could be supplemented with school records or talking with the child's teachers. Keep in mind that comprehension is generally more advanced than expression, and thus it may be that an interpreter would be most useful for facilitating maximal verbal responses or obtaining history versus basic understanding.
2. Evaluate for level of acculturation, which is useful for interpretation, particularly to determine if cultural variables could contribute to discrepancies in test performances (Ponton & Corona-LoMonaco, 2007). Aside from language spoken (see 1a), other indicators of culture include (a) ethnicity of friends, (b) foods eaten or preferred, (c) preferred music, (d) religion, (e) reading preferences, (f) cultural values, and (g) age when immigrated to the United States.
3. School records are a good resource to assist in determining premorbid functioning. However, when evaluating grades it would be important to review attendance, enrollment in mainstream classes, and enrollment in remedial English. Be sure to explore reasons for poor attendance.

4. Given that most parents have low levels of education and work at menial jobs due to poor English skills, parents' education and occupations may not be helpful to estimate premorbid abilities, particularly if both are low. More significant would be parents who have a relatively high level of education in Lao; for example, those who attended secondary schools. Parents who were educated in the city, speak French, or who held relatively high positions in Laos would suggest higher abilities. Similarly, low socioeconomic class would not be as significant as if the family were middle class.
5. In understanding the behavior or emotional state of Laotian American children, it would be important to evaluate the emotional state of the parents. Clinicians should evaluate for the presence of PTSD or depression in the parents, which could significantly affect the home environment or ability to carry out recommendations.
6. The K-ABC and TPT are recommended tests, as there are some norms for Laotian Americans and Laotians so that scores can be interpreted within a cultural context. Although the sample sizes are small, there are norms for children of highly educated parents and more rural areas. It should be mentioned that the Sequential Processing score for both Laotian populations is skewed by an extremely high Number Recall score, which is comparable to Digit Span. When interpreting data, it is recommended that more emphasis be placed on individual subtest scores versus composite indices.

Adults

1. Given that most Laotians who immigrated to America have a poor command of English, it is highly likely that an interpreter will be required. Interpreters would also be important as a cultural guide for placing behaviors in context and to make recommendations. Given the small Laotian community, it may be prudent to inform the family of the identity of the interpreter prior to the interview, as it is possible the family may know the interpreter in another capacity and may feel uncomfortable with this person serving this function. Thus, the family may prefer a family member providing interpretive functions to keep the family business within the family. Comprehensive recommendations on how to select and work with interpreters are beyond the scope of this chapter. Some basic considerations include meeting the interpreter beforehand to familiarize him or her with the purpose and requirements of the evaluations as well as providing guidelines for interaction (for a review see Ponton & Corona-LoMonaco, 2007). Clinicians should avoid using family, particularly children, as interpreters due to potential biases and difficulties that it can cause in Laotian American family dynamics.
2. Females are more comfortable with female interpreters and clinicians, and likewise for males (Keohavong, 1996).
3. Traditionally, Laotians who receive Western medical treatment would see a generalist due to lack of resources, with only the most severe cases referred

to a specialist (Kinzie & Leung, 1996). Thus, to ease possible worries, the clinician may have to thoroughly explain the reason for referral and purpose of evaluation.

4. Laotians tend to be reserved in interactions, particularly when revealing medical history; thus, history may need to evolve over time as the relationship evolves. To obtain a thorough pertinent history and to assist in developing rapport, encourage the client to provide a detailed account of his or her life in Laos, the impact of the war, and the traumas that he or she experienced prior to immigrating to the United States. Explaining the link between questions pertaining to symptoms and medical problems may also assist in eliciting information. If personal, communicating that the information is confidential and not for public discussion may help to alleviate anxieties (Keovilay & Kemp, n.d.).
5. Evaluate for acculturation. Of particular importance is age at time of immigration (see children recommendation 2).
6. Evaluate for specific symptoms of PTSD, depression, anxiety, and substance abuse and dependence. If present, inquire about the client's explanation for the symptoms.
7. Due to lack of neuropsychological norms for Laotian adults, for diagnostic referrals, we recommend a hypothesis testing approach based upon expectations of presentation for a specific neurological disorder (Fujii & Wong, 2005). Hypotheses should be developed from consensus statements or other widely accepted expert-based diagnostic guidelines. Data collected with the multimethod approach utilize client and collateral interviews describing the onset, quality, severity, and progression of cognitive, behavioral, and emotional symptoms of the presenting problem, as well as any medical and imaging data. This information would be compared to different diagnostic criteria for goodness of fit.
8. For referrals requesting a functionality evaluation after a known neurological disorder, it is recommended that clinicians utilize the literature and consensus statements to guide exploration of associated cognitive, behavioral, or emotional problems. Of particular importance are changes since the onset of a disorder. Inquire about the impact that these symptoms are having on the client and family.
9. As mentioned previously, because there are no known norms with Laotian adults, comprehensive neuropsychological testing is not recommended. However, clinicians may perform limited testing with homemade translated tests, keeping in mind that these are gross measurements at best, and would only be significant if performances are highly discrepant from expectations of the most similar normative group.
10. Due to low levels of education, there is a high level of illiteracy among adult Laotian immigrants. Thus, clinicians should be knowledgeable on the literature of how illiteracy affects brain functioning (for reviews see Ardila & Rosselli, 2007; Castro-Caldas, 2007). For example, illiterates were less likely to develop aphasia and more likely to produce semantic versus phonemic paraphasias

after left hemisphere lesions than literates (Castro-Caldas, 2007). On testing, illiterates' scores were not significantly different than those of literates of similar socioeconomic status on naming and identification of real versus pictures of objects, verbal fluency of familiar objects such as items in a supermarket, verbal memory recognition, and orientation. Cognitive areas most affected by education and literacy include digit span, verbal abstractions, calculations, and long-term semantic memory (Reis, Guerreiro, & Petersson, 2003).

11. Given this study, it would be most prudent to evaluate Laotian adults on tests or evaluations that are least affected by literacy. When testing for verbal memory, although there are no Laotian norms, we recommend using the World Health Organization (WHO) UCLA Auditory Verbal Learning Test (Maj et al., 1994) as the stimulus, with careful translation into Laotian (word list can be found in Mitrushina, Boone, Razani, & D'Elia, 2005). Words for this list were selected for their commonality across cultures, and the test was validated with samples from several countries, including Thailand.
12. We also recommend measures that estimate severity of impairment based on functionality, such as the Clinical Dementia Rating (Hughes, Berg, Danziger, Coben, & Martin, 1982).
13. General estimates of premorbid functioning can be based upon several factors: (a) education in Laos, with quality of education based upon hours in the classroom, subjects learned, availability of school materials, and student-to-teacher ratios; (b) children's academic achievement; and (c) current socioeconomic status. For these indicators, because the expectations would be low for both categories a and c, information would be most significant if education and socioeconomic status are average or higher.
14. The following are recommendations for writing the report: (a) make the implicit explicit by describing the thinking behind your conclusions, (b) don't forget to incorporate the potential contribution of psychological disorders such as PTSD in the formulation and recommendations, (c) indicate your level of certainty given the type of data that you have collected, and (d) describe all nonstandardized test administrations.
15. The following are suggestions for making recommendations and providing feedback: (a) focus on crisis resolution; (b) emphasize community strengths, such as reliance on family, ethnic community, and strong individual and group survival skills; (c) describe the rationale for recommendations; (d) avoid interactions that result in a loss of face; (e) be sure that the family is present and the father involved in decision making; and (f) be respectful of family decisions if nontraditional forms of treatment are selected (Bromley & Chhem Sip, 2003).
16. Be cognizant of traditional Southeast Asian values of harmony and balance and the avoidance of conflict. It is possible that a Laotian American client may become angry or upset if he or she perceives the clinician to be too confrontational. In this case, the client may politely tell the clinician that he or she will not return due to lack of transportation or work responsibilities, or just not show up at all for a follow-up appointment (McKenzie-Pollock, 1993).

Illustrative case sample

SP is a 51-year-old Laotian female who was the chief cook in the family restaurant specializing in Thai cuisine. SP's husband and four children, ages 23 to 30, also work in the restaurant. The restaurant is successful to the point where the family live in a middle-class, predominantly White neighborhood. About eight years ago, SP began to experience intermittent episodes of motor weakness in her right arm and mild slurring of speech. Episodes have progressively been getting more frequent, with symptoms becoming worse. SP has also been getting slower in preparing meals and experiencing difficulties keeping up with the orders when the restaurant is busy. SP has also become more fatigued, and once appeared to fall asleep while cutting vegetables. She has also made more mistakes while cooking, sometimes forgetting ingredients.

The family believed SP's symptoms were due to spirit loss, as the family had just moved from the Laotian neighborhood to their new home when her symptoms began. The family initially sought treatment from an *acharn*, who prayed to the spirits to return to SP's body. This intervention appeared to work; however, as SP's symptoms began to progress, the family decided to seek treatment from a community clinic serving the Laotian population. The general practitioner suspected SP had multiple sclerosis (MS) and referred her to a neurologist. The neurologist confirmed the diagnosis through MRI, which revealed scattered white matter lesions with focal lesions in the left frontal and temporal areas.

Since SP was the chief cook, the family was concerned about her ability to work or teach cooking skills to her family. To address this concern, the neurologist referred SP to a neuropsychologist, Dr. F, for assessment and to make recommendations for vocational rehabilitation. Dr. F employed an interpreter from the clinic where SP was initially seen. They met before the evaluation so that Dr. F could explain the purpose of the evaluation to the interpreter, inquire about important cultural factors, and develop a game plan for the evaluation. It was decided that the evaluation would take two days, with another day to provide feedback. The first day of the evaluation would focus on establishing rapport, answering family questions, and data gathering. Testing would be administered on the second day.

SP was accompanied by her husband and oldest son. The purpose of the evaluation was explained to the family as information to assist SP in improving work skills. Both family members stayed during the history-taking session. SP spoke in broken English, which the interpreter described as above average for many first-generation Laotians. To establish rapport, Dr. F asked SP about the family business, her memories of Laos, differences between Laos and the United States, and how difficult it must have been to immigrate. Dr. F got the following background information. SP was born and raised in Vientiane. Her father worked as a teacher, while her mother was a housewife. She has an eighth-grade education and married the son of a government official in Laos. After the Pathet Lao took over the government in 1975, SP escaped to a Thai refugee camp and immigrated to the United States in 1978, shortly after the birth of her first son. SP and family settled in California. They worked in menial jobs in housekeeping and restaurant help before opening their own restaurant about 15 years after immigrating. SP is

literate in Laotian and reads Laotian newspaper and books. Initially she did the accounting for the business, until they were able to hire a bookkeeper. SP's oldest son graduated from a four-year college in business, and her youngest son is enrolled part-time.

Given SP's father's occupation, her educational background, middle-class socioeconomic status, children's educational attainment, and relatively good English abilities, Dr. F and the interpreter estimated that her premorbid functioning to be high for Laotian standards. Dr. F decided to use tests from the World Health Organization battery, which, although not validated on a Laotian sample, were validated in several countries in an international HIV study (Maj et al., 1994). Tests included RAVLT (translated to Laotian), Color Trails 1 and 2, Digit Symbol, Digit Span, Animal Fluency, Grooved Pegboard Dominant and Nondominant Hands, and Block Design. To supplement, these tests, WMS-III Visual Reproduction I and II, and WAIS-III Similarities were also administered. Given the lack of validation, results would be interpreted cautiously with broad strokes. Norms for below high school were used for interpretation.

Tests results indicate borderline level functioning on tests of verbal memory, processing speed (Color Trails, Digit Symbol, and Animal Fluency), and fine motor functioning for her dominant right hand. Working memory was in the average range (Digit Span), while abstractions (Similarities), nonverbal reasoning (Block Design), and visual memory (VR I and II) fell within the low average to average range. Test results were interpreted to be consistent with MS and SP's MRI.

In the feedback session, Dr. F explained symptoms of MS and test results. He described the different types of progression in MS and recommended the family consider applying for Social Security disability if SP's condition worsened to the point where she could not work. To facilitate her ability to work, Dr. F recommended that SP reduce her role to assistant cook, limit her working hours, and train family members to cook. Family should allow SP to rest when tired and avoid cooking, carrying items, cutting with knives, or working near the stove.

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APPENDIX D

STUDIES ON NEUROPSYCHOLOGY, NEUROLOGY, AND COGNITION

Series Editor:

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The Neuropsychology of Asian Americans

Edited by

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Series preface

One of the major goals of our book series *Neuropsychology, Neurology and Cognition* is to facilitate the application of neuropsychological knowledge to clinical populations. In editing *The Neuropsychology of Asian Americans*, Dr. Daryl Fujii provides the basis for application of neuropsychological principles and practices to the fastest-growing major racial/ethnic group in the United States in terms of percentage growth. According to the 2000 U.S. census, Asian Americans made up 4.3% of the U.S. population, showing a 63% increase from data gathered in the 1990 census. Asian Americans thus constitute a significant and increasing base of need for clinical services.

In this volume, multiple authors address optimal parameters for providing clinical services to subgroups of Asian Americans in terms of clinical interaction, parameters of the testing context, and suggestions for providing the results of neuropsychological assessment in ways which are culturally competent and sensitive. Even more importantly, the chapters provide a central repository of listing of available resources for each subgroup ranging from Cambodian Americans, to Laotian Americans, to Hmong Americans. Each group, of course has a rich and unique cultural history and context which must be taken into account for competent and ethical clinical practice. The second part of this ground-breaking text addresses the state of knowledge and practice of neuropsychology within the various Asian countries and cultures, leading the reader toward an informed journey of understanding and further exploration of issues and possibilities in expanding their experience with Asian American Neuropsychology.

I welcome this valuable contribution our series and highly recommend *The Neuropsychology of Asian Americans* to anyone who is privileged to interact with the Asian American community in a clinical, research, or scholarly context. It will be an interaction which increases in richness and frequency with each passing decade.

Linus A. Bieliauskas
Ann Arbor
May, 2010

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11 Neuropsychology of Vietnamese Americans

Dung Ngo, Minh-Thu Le, and Phuoc Dinh Le

Brief history

Vietnam has a long history that spans over 4000 years (Whitmore, 1986; Vets With a Mission, 2007). According to legend, the Vietnamese people are descendants of the Dragon Prince, Lac Long Quan, and the Immortal Princess of the Mountains, Au Co (Taylor, 1983). However, their union was characterized by irreconcilable cultural differences, as Lac Long Quan was of the dragon descendants and Au Co of the fairy lineage. After Au Co laid a 100-egg pouch producing 100 children, the couple mutually agreed to separate and each took custody of 50 children. Au Co took her children to the mountains and highlands, while Lac Long Quan headed toward the lowland areas—the rivers and seas. King Hung, the eldest son, established the Kingdom of Van Lang, which is present-day North Vietnam and the northern region of Central Vietnam (Vets With a Mission, 2007).

From a more factual perspective, the Vietnamese people are thought to be descendants of people who settled in the Red River Delta thousands of years ago (Microsoft Encarta Online Encyclopedia, n.d.). However, the legend of Lac Long Quan and Au Co has had a profound impact on the ethnic identity of the Vietnamese people. Today, Vietnamese children are still taught about this legend at school and take great pride in their ancestors' origin. Every year, the Vietnamese around the world observe a traditional day in commemoration of their ancestor, King Hung (*Gio To Hung Vuong*). This cultural event is aimed at promoting and preserving Vietnam's traditional values for the next generation of Vietnamese children.

Vietnam's history is also filled with struggles against foreign invasion and dominance. Vietnam was subjected to Chinese occupation for over 1,000 years, spanning, from 111 B.C. to 938 A.D. (Microsoft Encarta Online Encyclopedia, n.d.). During this time, the Vietnamese people resisted tirelessly against the Chinese control. One of the earliest and most notable uprisings in an attempt to regain independence for Vietnam was commenced by the Trung sisters (Trung Trac and Trung Nhi) about 30–40 A.D. Additionally, in the 1880s, France held Vietnam and the neighboring countries of Laos and Cambodia as colonies subjugated to her rules (Bankston, 2000; Ferry, 2004; First Battalion Fiftieth Infantry Association, n.d.). In 1954, following the defeat of the French at Dien Bien Phu, the Geneva Accord stipulated the

withdrawal of French troops and the temporary division of the country into North Vietnam and South Vietnam at the 17th parallel, with the Communist North and anti-Communist South. Reunification via national elections was to take place in 1956 but it never occurred (Bankston, 2000; Microsoft Encarta Online Encyclopedia, n.d.).

In the 1960s, with its primary goal of containing international Communism and preserving democracy in the South, the American government became intensely involved in the Vietnam War (Bankston, 2000). In response to the American public's opposition to the war and in accordance with the Paris peace talks in 1973, the United States agreed to a cease-fire agreement and a timetable for the withdrawal of American troops and the turning over of the war to the South Vietnamese army (Bankston, 2000). The Vietnam War (1960s–1975) cost the United States 58,000 lives and 350,000 casualties. It also resulted in approximately 1 to 2 million Vietnamese deaths (Digital History, 2008). In April 1975, the capital of South Vietnam, Saigon (now Ho Chi Minh City), fell to the North Vietnamese Communist invasion and set the stage for the largest exodus in the history of Vietnam.

Present-day Vietnam: The socialist republic of Vietnam

Geography

Vietnam is bordered to the north by China, to the west by Laos and Cambodia, and to the east and south by the Gulf of Tonkin, South China Sea, and Gulf of Thailand. Vietnam is slightly larger than the state of New Mexico. The 2001 Vietnamese census reported a population of over 85 million, with about 5.8% of the population 65 years of age or older (Microsoft Encarta Online Encyclopedia, n.d.). In contrast to the popular belief, Vietnam is quite a multiethnic, multicultural society. It has been documented that Vietnam consists of more than 50 ethnic groups; however, 90% are ethnic Kinh (Vietnamese), 2% are ethnic Chinese, and about 8% are made up of various tribal groups, including the Khmer, Cham, Hmong, Thai, Muong, and others (Microsoft Encarta Online Encyclopedia, n.d.). The majority of these ethnic minorities live in mountain areas and have become increasingly assimilated into the ways of life of the mainstream Vietnamese culture (Ngo, unpublished data).

Language

The Vietnamese language is a tonal language in which the meaning of a word is dependent upon the tone or the pitch with which it is spoken. There are three main regional dialects with subtle variations in vocabulary (local word usage) and differences in pronunciation. For example, northern Vietnamese refer to the “pig” as *con lon*, while southern Vietnamese call it *con heo*, or *cai phanh* and *cai thang* for “the car brake” in the North and South, respectively. Additionally, people from different regions may not be familiar with the local regional dialect. Although subtle, these differences can create troublesome misunderstandings in everyday communication across the three regions of Vietnam.

About the fourteenth century A.D., *Chu Nom* (a form of writing modified from the Chinese *Chu Han*) was developed. By the middle of the seventeenth century, a Jesuit missionary, Alexandre de Rhodes, developed *Quoc Ngu*, a Romanized phonetic script with diacritical marks to help catechize and compile a Vietnamese-Latin-Portuguese dictionary. The French rulers encouraged *Quoc Ngu*, which progressively replaced the Chinese as well as *Chu Nom* methods of writing. French and Portuguese missionaries are credited for the creation of the current writing system, *Quoc Ngu*, which phonetically transcribes spoken Vietnamese using the Latin alphabet (Bankston, 2000). Although *Quoc Ngu* is considered the official national language of Vietnam, with the increase in Western influences, English has become increasingly popular and is even favored as a second language in educational settings. Other languages include French, Chinese, and Khmer. Mountain area languages such as Mon-Khmer and Malayo-Polynesian are also spoken, although they are much less common.

Religion

Common religions in Vietnam include Buddhism, Cao Dai, Catholicism, Confucianism, Taoism, Hoa Hao, Islam, Protestantism, and Animism (Bankston, 2000). The majority of Vietnamese are self-classified as Buddhists, and about 7% are Catholics (Microsoft Encarta Online Encyclopedia, n.d.).

Education

Chinese influence

Historically, Vietnam's educational system was strongly influenced by Chinese and French cultures (Cima, 1987). Under the Chinese control, education was mainly reserved for children of royal backgrounds and other high-ranking officials. During this time, Vietnam's education followed the Mandarin system (or Confucian system) and examinations were highly competitive and used primarily to recruit public officials. The curriculum was based on the philosophies of Confucius and his disciple Mencius, which emphasized Confucianism and the conduct of the civil service (To Thuy Yen, Vietnamese poet, personal communication, 2008). Only scholars well versed in Confucianism could pass the civil service examinations. Learning was based primarily on rote memory, and science and technology were not the main focus under the Confucian system. Opportunities to attend school were strictly reserved for males, and education was the highest cherished ideal. In an agricultural society, such as Vietnam, education was perceived as the only means to advance intellectually and socially. Scholars or the educated were looked up to and highly revered.

Vietnam's first university, the *Quốc Tử Giám* (National University), was established in 1076 to teach Confucianism to children of the royal family and nobility. Vietnamese Mandarins or Confucian scholars, who had passed the examinations, were regarded as social, intellectual, and cultural leaders. Due to the lack of opportunities and resources at the national level, the majority of students received their education at the local levels from small private classes, which were taught by teachers

who had been educated. The Confucian school system was administered in Vietnam for approximately 2,000 years (Cima, 1987) and was essential for admission to the ruling class of scholar-officials (To Thuy Yen, renowned Vietnamese poet, personal communication, 2008).

French influence

The French established its colonization in Vietnam in the mid-1900s. During this period, Vietnam's educational system was converted from the old Confucian system into a more Western-oriented one. During the French rule, education was again limited only to members of the elite and the upper class. Poverty was a major obstacle to learning, and secondary and higher education were beyond the reach of many children. The French educational system consisted of 13 years of education: 3 years of elementary school, 3 years of primary education in French, 4 years of vocationally oriented primary superior education in French, and 3 years of French-language secondary education leading to an Indochinese baccalaureate (high school diploma) (Cima, 1987). The content areas did not focus extensively on math and sciences, but rather on the teaching about Vietnam and agricultural life. By this time, the use of Chinese characters in schools was discontinued, and the use of *Quoc Ngu* was included in the curriculum. However, French became the second language of great importance. Many Vietnamese elders who were educated under the French school system may be fluent in both French and Vietnamese.

Current system

As discussed above, the Vietnamese educational system was influenced by the Chinese and French. The current system is now very much affected by the United States and other Western industrialized nations. The current educational levels are very similar to those of the American school system, including preschool, kindergarten, middle school, and high school. Beyond high school education, there are trade or technical schools, as well as universities. Most universities are operated and managed by the government. Although under the Socialist Republic of Vietnam, the current educational system still has some resemblance to the French model; the curriculum was revised to include more emphasis on Vietnamese language, literature, and history, as well as the teaching of revolutionary ethics and ideologies of Marxism-Leninism and Ho Chi Minh.

With the advancement in globalization and high technology, and the increased number of foreign investment companies in Vietnam, the trend to study English has spread rapidly from the city to the countryside. In fact, college graduates must possess a strong command of English in order to find jobs in the cities. Additionally, English proficiency is a prerequisite for studying abroad in English-speaking countries.

Immigration history

From 1951 to 1960, the Vietnamese population in the United States was estimated to be a mere 335 people (Ferry, 2004). However, shortly prior to the fall of Saigon

in 1975, President Ford authorized the entry of 125,000 Vietnamese refugees to the United States (Bankston, 2000; Ferry, 2004). These individuals constituted the first wave of Vietnamese immigrants. They were thought to be well educated and among the elite of South Vietnam, with ties to U.S. military personnel or American companies conducting business in Vietnam. Bankston (2000) reported that 30% of the heads of households in the first wave were professionals, 16.9% were in transportation occupations, and 11.7% were in clerical and sales occupations. He also indicated that 70% were from urban areas. Thus, individuals comprising the first wave possessed knowledge and skills that were readily transferable in the host country. They were initially housed at select military camps and departure typically required sponsorship. The sponsor, whether an individual or a group, was expected to assume financial and personal responsibility for the refugee for up to two years and to assist in the procurement of housing, employment, and education (Bankston, 2000; Ferry, 2004).

The second wave of refugees, also known as "the boat people," came between the late 1970s and late 1980s in response to the worsening political and economic conditions in Vietnam. From 1980 to 1981, about 181,300 Vietnamese were admitted to the United States (Bankston, 2000). Many fled in small overcrowded boats to refugee camps in nearby Asian countries prior to secondary relocation to the United States or other host countries. Tales of pirate attacks, drowning, physical and sexual assault, and starvation were plentiful. There were even stories of refugees being chased away by local inhabitants who were ill-equipped to provide for them (Ferry, 2004). This second wave of refugees was said to be less educated, favoring farming and fishing, and coming primarily from rural areas (Bankston, 2000; Ferry, 2004). They were also said to have experienced the most preimmigration trauma.

After 1983, due to an agreement negotiated with the Vietnamese government by the United Nations, Vietnamese entered the United States under the Orderly Departure Program (ODP) (Ferry, 2004). According to Ferry (2004), those who qualified were individuals with close relatives in the United States, individuals who had an established connection to the American government (including being the offspring of a Vietnamese mother and an American soldier), and political detainees in reeducation camps (typically former South Vietnamese government officials and military officers).

Currently, Vietnamese continue to seek entry into the United States at a steady rate through the family reunification program. Statistics from the Department of Homeland Security (n.d.) showed that about 289,000 Vietnamese were admitted to the United States from 1997 to 2006, and that 31,524 Vietnamese immigrants entered the United States in 2004, 32,784 in 2005, and 30,695 in 2006. The number of undocumented immigrants is unknown.

Demographic profile of Vietnamese Americans

According to the 2000 U.S. census (Barnes & Bennett, 2002; Reeves & Bennett, 2004), 11.9 million people in the United States identified themselves as being Asian or of Asian heritage. Among this Asian population, Vietnamese Americans make

Table 11.1 Vietnamese American population in the United States by region

<i>Regions</i>	<i>Population</i>
Northeastern states	115,487
Midwestern states	106,938
Southern states	335,679
Western states	564,424
Total	1,122,528

Source: U.S. Census Bureau, 2000.

up 10.9%, or roughly 1.2 million. This includes those who identified themselves as Vietnamese at least in combination with one other race (e.g., Chinese Vietnamese) in the census. From 1990 to 2000, Vietnamese Americans doubled in size, growing from about 614,547 to 1,212,465 (American FactFinder/U.S. Census Bureau, 2007; Reeves & Bennett, 2004). About 76.1% are foreign born and 62.4% speak English less than "very well" (Reeves & Bennett, 2004). The original intent of the immigration program was to disperse Vietnamese refugees throughout the country in order to avoid overburdening a particular community. However, after the initial resettlement period, a secondary migration was observed as Vietnamese started to migrate to more urban areas to be closer to families and fellow Vietnamese (Bankston, 2000; Ferry, 2004). California is said to be the home of about 50% of the Vietnamese American population, and the southern states of Texas, Virginia, Florida, Georgia, and Louisiana account for about 30% (Ferry, 2004). The three largest Vietnamese communities are Little Saigon, a suburb in Orange County, California, with an estimate of 350,000; San Jose, California, with an estimate of 125,000; and Houston, Texas, with an estimate of 100,000 (Ferry, 2004). It is believed that these figures are underestimates.

The 2000 U.S. census (Reeves & Bennett, 2004) reveals that nearly 43% of Vietnamese Americans have at least some college education, with a little over 19% achieving a bachelor's degree or higher. Approximately 56% of Vietnamese American women and 68% of Vietnamese American men participate in the labor force. They are employed in all sectors of the economy, with nearly 27% in management, professionals, and related occupations. About 19% are in the service sector. Another 19% are in sales and clerical positions. Approximately 29% are in production and transportation. The median income of Vietnamese families in 1999 falls below the median income of all families in the United States (\$47,103 vs. \$50,046) and the median income of Asian families (\$47,103 vs. \$59,324). The poverty rate in 1999 for Vietnamese Americans is 16%, higher than the rate for the total population (12.4%) and higher than the rate for Asian Americans (12.6%).

With respect to religious affiliations, more than 50% of Vietnamese Americans follow Buddhism, and it is estimated that as many as 40% of Vietnamese in the United States are Roman Catholics (Ferry, 2004). Many Vietnamese Buddhists also adhere to certain beliefs and teachings of Confucianism and Taoism (Ferry, 2004). With the normalization of relations with Vietnam under the Clinton administration,

Vietnamese Americans began to visit their homeland, likely reacquainting themselves with old traditions and learning newly evolved customs.

Trauma and psychiatric disorders

From the clinical perspective, it is important to note that many Vietnamese refugees came to the United States with significant preimmigration traumatic experiences, including war, imprisonment, and torture. The horrific life experiences of Vietnamese refugees who escaped by sea were widely reported in the decade from the late 1970s to the late 1980s. In the early 1980s, the U.S. Committee for Refugees estimated that nearly 80% of the Vietnamese boat people had been brutally attacked by sea pirates. These horrific experiences undoubtedly had long-lasting psychiatric and neuropsychological effects on these individuals.

The amount and types of traumatic experiences that Vietnamese Americans suffered before coming to the United States will likely put these individuals at an increased risk for developing various psychiatric conditions. Vietnamese boat people who escaped in the late 1970s and early 1980s and other newcomers from Vietnam who were detained in reeducation camps are most vulnerable to psychiatric disorders. These individuals reportedly experienced a multitude of traumas, including rape, being lost, hunger, witnessing the death or murder of loved ones, and torture (U.S. Committee for Refugees, 1984; Mollica et al., 1987). Psychiatric disorders such as chronic depression and posttraumatic stress disorder (PTSD) have been documented among the Vietnamese refugees in the United States (Kleinman, 1990; Mollica, Caspi-Yavin, & Bollini, 1992), as well as in Canada, Norway, and Japan (Ebata & Miyake, 1989; Vaglum, 1993). Considerable data have revealed the negative effects of depression on cognitive functioning (Jorm, 2001; Zubenko et al., 2003). Thus, pre-immigration trauma and its psychological consequences should be taken into consideration in a standard neuropsychological evaluation among Vietnamese Americans.

Vietnamese who immigrated to the United States were motivated by the hopes of attaining a better life for themselves and their families. However, they continue to face many challenges that can significantly impact mental health in their new country. Racism and prejudice are constant obstacles. It has been reported that only 36% of Americans polled in 1975 favored the admittance of Vietnamese refugees to the United States (Ferry, 2004). The lack of proficiency in English and transferable job skills have limited their job opportunities. Consequently, new immigrants are forced to hold multiple low-paying, menial labor jobs in order to support their families (Nghe, Mahalik, & Lowe, 2003; Ferry, 2004). Economic necessity also propels Vietnamese women into the workforce, thereby altering the family dynamics and traditional gender roles. Differences in the rate of acculturation between parents and children, with parents adhering more closely to traditional values and children quickly adopting more autonomous customs, result in intergenerational conflict.

As illustrated in the previous section, the pattern of immigration within the Vietnamese American population in the United States varied significantly. Each wave of refugees encountered different life experiences; the type and degree of traumatic events among different waves may also be unique. The types and frequency

of trauma have also been found to vary between Vietnamese men and women (Ngo, Tran, Gibbons, & Oliver, 2001). Therefore, treating Vietnamese Americans as a homogenous group is likely to threaten external validity. Future studies should attempt to separately examine the psychological well-being of different waves regarding migration of the Vietnamese population.

Posttraumatic stress disorder and cognitive impairments

Studies report that individuals suffering from posttraumatic stress disorder (PTSD) demonstrate impairments across a wide range of cognitive domains, including impaired declarative memory (e.g., Bremner et al., 1995), impaired attention and working memory (e.g., Uddo, Vasterling, Brailey, & Sutker, 1993; Vasterling et al., 1993; Klonoff, McDougall, Clark, Kramer, & Horgan, 1976), and lower intelligence (Buckley, Blanchard, & Neill, 2000). For example, Bremner et al. (1995) found poorer immediate and delayed verbal memory among Vietnam veterans with PTSD than among healthy control subjects. Further, poorer immediate and delayed verbal memory was also reported among survivors of childhood abuse with PTSD, compared to matched controls (Bremner et al., 1995). The authors also reported a significant correlation between trauma severity and verbal memory impairments. Impaired learning, perseverative errors, poorer word fluency, and impaired immediate visual memory have also been documented among Vietnam veterans with PTSD, compared with control subjects (Uddo et al., 1993). Finally, Vasterling, Brailey, Constans, and Sutker (1998) reported impairments in sustained attention, mental manipulation, acquisition of new information, retroactive interference, and errors of commission and intrusion among Gulf War veterans with PTSD, compared with mentally healthy controls. Given the high prevalence rates of PTSD among Vietnamese Americans, it is crucial that neuropsychologists consider the effects of past trauma on cognitive impairments among these individuals. Thus, symptoms associated with past trauma should be investigated and taken into consideration in the assessment and interpretation of the test results.

Conceptualization of mental illness health

An understanding of how Vietnamese Americans view mental illness or neurodegenerative diseases is critical in developing effective assessment, diagnosis, and treatment strategies, as beliefs about the causes of these illnesses may influence how and from whom Vietnamese individuals seek professional services. Significant cross-cultural data are available to suggest that many ethnic minorities have beliefs about illness and treatment that differ significantly from Western scientific medical practices (e.g., Chrisman & Kleinman, 1983; McGoldrick, Pearce, & Giordano, 1982). For example, some Asian cultures perceive the causes of mental illness to be strongly associated with organic factors, with a lack of willpower, and with morbid thinking (i.e., thinking bad thoughts) (Sue, Wagner, Ja, Margullis, & Lew, 1976). Arkoff et al. (1966) reported that in comparison to American students, Asian students were more likely to believe that mental health could be improved through the

exercise of willpower and a preoccupation with pleasant thoughts. Similarly, Sue and colleagues (1976) reported that Asian American students were more likely to perceive that the mentally ill look and act different, that willpower is the basis of personal adjustment, that women are more prone to mental disorder than men, that the avoidance of negative thoughts enhances mental health, and that mental disorder is primarily attributed to organic factors.

Different perspectives of deviant behaviors are believed to result from differences in socialization. Asian individuals are generally socialized to exercise greater self-control and conformity to the family or community. Individuals who go against the traditional family system would be considered deviants, lacking strength and character. This clearly contrasts with Western values, which promote and encourage individualism and independence.

Vietnamese perceptions of mental illness are also reflected in their language. Vietnamese laypersons often refer to a person with a psychiatric disorder (e.g., schizophrenia) as "a crazy person." Given this label, in addition to perceptions that those who are mentally ill lack willpower, and the importance of conformity to family and community, it is not surprising that there is a strong stigma associated with mental illness. Consequently, Vietnamese generally do not seek professional help until the condition becomes severe or unbearable.

When seeking treatment, Vietnamese would more likely accept herbal medicine or home remedies to alleviate physical or emotional pain versus psychotherapy or psychotropic medications.

Conceptualization of illness: Alzheimer's disease

Traditional Vietnamese conceptualization of health disorders is illustrated in their beliefs about dementia. In order to understand the perception of and attitudes toward dementia among Vietnamese Americans adults, an author of this chapter (Ngo, unpublished data) conducted a focus group study on these issues among Vietnamese elders in Houston, Texas, during the summer of 2007. The purpose of this study was to explore the perception of Alzheimer's disease and factors that influence treatment issues among Vietnamese American elders. Caring for Vietnamese elders requires an understanding of their specific needs, as well as cultural issues that affect their attitudes and help-seeking behavior on various types of illnesses (Tran, Ngo, & Sung, 2001). The focus group participants were recruited from Lac Hong Day Care Center ($N = 31$). Participation was voluntary. All participants were born in Vietnam, spoke very limited English, and have resided in the United States for an average of 13 years. The average age of the participants was 66 years; no one worked at the time of the study. The average number of years of education in Vietnam was 10th grade for men and 6th grade for women. The qualitative results were systematically coded and summarized according to the methods described by Rosenthal and Rosnow (1991). The results were summarized into two broad categories: "perception of causes of AD" and "assessment, diagnosis, and barriers to treatment."

The vast majority of the participants had not heard of and were not familiar with the English term *Alzheimer's disease* (AD). However, when provided a description

of the symptoms, most participants quickly identified AD with a condition called *lan* in Vietnamese language, which described a condition of confusion or memory impairment associated with old age. The majority of the participants associated the cognitive impairments of AD with the natural process of aging. The notion that AD may be caused by neurological factors, lifestyle, brain injuries, or genetic factors was never mentioned by any group member. Group members appeared to concur with the comment made by one participant that "memory problem is natural as we grow old, just like a car that has many engine problems as it gets old." Several group members alluded to the relationship between memory loss and mental problems by stating, "When you can't remember, there must be something wrong with your head."

In terms of treatment, most participants did not know that there are specialists for "memory problems" that can evaluate or diagnose dementia. Neuropsychological evaluation remains a foreign concept to all participants. Additionally, the vast majority of the participants did not know that symptoms of AD could be detected early to enhance treatment. None of the focus group participants expressed an awareness of the importance of early detection of symptoms in order to properly diagnose and treat the disease. The vast majority of the focus group participants did not realize that treatment is available for memory-related problems, although over 50% of the group acknowledged experiencing regular mild forgetfulness at the time of the study. Several group members indicated that they knew of someone with severe memory problems but did not seek help and were kept in the home. Several participants indicated that they did not know where to seek help. A few group members indicated that they reported memory problems to their Vietnamese primary care physicians but did not receive any follow-up care. Overall, participants appeared to lack information about the availability of medical care for dementia or cognitive-related problems. Furthermore, it appeared that cultural acceptance of memory loss was a normal part of aging, and this has led to the delay of diagnosis and treatment among Vietnamese American elders.

In summary, the findings from this focus group study suggested that Vietnamese American elders possessed very limited information about the spectrum of symptoms associated with AD, as well as knowledge about the assessment and treatment of this neurodegenerative condition. Further, it was concluded that the cultural perception of memory loss is that it is normal, and consequently contributes to the delay of treatment. Finally, findings from Ngo's study illustrated that the perceptions of AD and knowledge about assessment and treatment of AD varied among various subgroups of Asian Americans. For instance, in Jones et al.'s (2006) study, virtually all participants, regardless of age or experience, had heard, seen, or read about AD. Acculturation appeared to play a powerful role in the perceptions of and attitudes toward AD among subgroups of Asian Americans. These findings attest to the importance of heterogeneity of Asian Americans, and that various cultural factors, as well as levels of acculturation, need to be considered in the assessment and treatment of this population.

Issues in neuropsychological assessment among Vietnamese Americans

In this section we will examine a number of key issues related to conducting a neuropsychological assessment with Vietnamese-speaking patients. Past studies

have documented the significant effects of trauma, education, and language on neuropsychological test performance (e.g., Klonoff et al., 1976; Ferraro, 2002; Uzzell, 2007). Accordingly, these cultural factors will be discussed in the sections below.

As mentioned in the previous section, many Vietnamese Americans have undergone horrific trauma prior to coming to the United States. In particular, individuals who escaped by boats or by land and those who were imprisoned after the war (ex-political detainees) are most at risk for various psychiatric disorders. These psychiatric conditions (e.g., depression and PTSD) may confound the results of neuropsychological tests. Additionally, cross-cultural researchers have documented that Asian Americans, including Vietnamese Americans, are prone to somatization due to cultural stigma (Leong & Lau, 2001). Quite often, Vietnamese patients will complain of headaches, sleep disturbances, poor appetite, and dizziness. It is important for the neuropsychologist to assess the underlying cause of these symptoms in order to ascertain if they are organic or psychological in nature.

Formal education has been implicated to have a protective effect on cognitive decline among both healthy and demented individuals (Ostrosky-Solis, 2007). However, past studies that examined the relationship between education and dementia have focused mainly on AD. For instance, it has been postulated that individuals who are highly educated experience a later onset of AD and with a lesser degree of severity (e.g., Katzman, 1993). Education has also been found to affect performance on neuropsychological tests among certain ethnic minority groups. For example, Pontón and colleagues (1996) reported that Hispanic individuals with a sixth-grade education scored two standard deviations below the average norm, compared to individuals with an average of 16 years of formal education. These findings draw attention to the potential of misdiagnosis without appropriate normative data.

Formal education among Vietnamese elders is complex because many of these individuals have endured long decades of war and migration. Our clinical experiences indicated that the majority of Vietnamese elders do not have an educational level higher than the 10th grade. Poverty, migration, and war seemed to be major factors that prevented Vietnamese elders from attaining a higher education. For example, after the French lost their battle at Dien Bien Phu in 1954, more than 1 million Vietnamese migrated from the North to the South (Tarling, 2004). Consequently, their schooling was abruptly ended or interrupted during this chaotic period. The majority of Vietnamese elders who are members of the Vietnamese Seniors Association of Houston classified their educational level as either "elementary" or "high school," equivalent to 1st to 6th grade and 10th to 12th grade levels in the United States, respectively. None of the participants in Ngo's focus group study ($n = 31$) had additional formal education in the United States. Only 3/31 (9.6%) of the women in this study completed high school in Vietnam, compared to 21/31 of the men (67.7%). Furthermore, elderly individuals who attained higher education during this era likely came from privileged or financially well-off families and represented only a small percentage of the cohort. Another cohort of Vietnamese elders who likely possessed a high school education or specialized training in higher education includes former military officers. This cohort has also been found to experience mass trauma related to combat situations, imprisonment, and torture after the Vietnam War (Mollica et

al., 1986). In summary, many Vietnamese elders came to America with very limited formal education due to poverty and the consequences of the war. However, these individuals may develop a broad range of knowledge as a result of continuing their education at home and being self-taught.

English language skills are another important factor that affects neuropsychological test results among Vietnamese Americans. According to the 2000 U.S. census (Reeves & Bennett, 2004), more than 97% of Vietnamese elders were born outside the United States, and the vast majority did not speak English well or at all. Compared with elder Asian Americans from other ethnic backgrounds, Vietnamese elders immigrated to the United States more recently, and more than 75% do not speak fluent English (Reeves & Bennett, 2004). Poor English proficiency has been found to be one of the major obstacles in seeking health and mental health services among Vietnamese Americans (Ngo, 2007), especially if the condition requires a specialist (e.g., neuropsychologist) who is not familiar with the Vietnamese culture or language. For these reasons, Vietnamese neuropsychologists who can speak and are familiar with Vietnamese culture are much needed.

When a culturally and linguistically matched neuropsychologist is unavailable, an interpreter is often used in the evaluation process. One should be very cautious when an interpreter is used. The accuracy and validity of the neuropsychological evaluation may be greatly compromised due to language and cultural factors. For instance, an interpreter who is untrained in the health or mental health profession may lack the knowledge of specialized terminology to interpret. Some experts believe that the accuracy and validity of a neuropsychological evaluation is significantly reduced when using an interpreter (Dr. Robert Kookan, personal communication). In addition, Vietnam is divided into three distinct regions (i.e., North, Central, and South). Locals from each of these regions speak distinct dialects and use terminologies that may be foreign to individuals from a different region. For example, North Vietnamese refer to a funnel as *cái phễu*, whereas Vietnamese from the central region refer to the same object as *cái quặng*; North Vietnamese refer to the car brake as *cái phanh*, whereas South Vietnamese refer to the same object as *cái thang*. Thus, when using an interpreter, it is important to ensure that the individual is well trained in the specialty area, as well as possesses an excellent command of all three regional dialects of the Vietnamese language.

Other cultural factors that may affect the process of a neuropsychological evaluation include communication styles and the hesitancy to reveal personal information among Vietnamese individuals. Psychologists generally are trained to collect as much background information as possible during the initial visit. The authors found that many Vietnamese patients are quite uncomfortable when being asked to provide a detailed family history and personal information on the first visit. A patient once shared his thought with the author (Ngo) that "it makes me uncomfortable when you asked too many personal questions; I don't know what you're going to do with this information." One way to overcome this obstacle is to focus more on the presenting symptoms that the patient is experiencing and provide a medical explanation for these symptoms at the end of the interview. Additional family history and

background information can be obtained from the patient, or from another family member, when there is a sense of trust and rapport.

Finally, throughout the process of the evaluation, it is important to be aware that Vietnamese people are socialized to show respect and compliance with authority figures, including individuals from the medical profession. Most Vietnamese would avoid expressing disagreement toward or even asking for clarifications from the psychologist. This cultural behavior would likely affect test results since the vast majority lack knowledge about what a neuropsychological evaluation is. Additionally, from the authors' clinical experiences, Vietnamese patients rarely volunteer to discuss the side effects of their medications, unless asked directly. It is common for Vietnamese patients to discontinue medications when they experience side effects, rather than to discuss the issue with their physician. Also, there are important differences in terms of communication styles. Quite often a "yes" means "I hear you," rather than "I agree with you." The lack of such communication between doctor and patient may lead to the Vietnamese patient discontinuing treatment on his or her own.

Neuropsychological tests

Given the lack of sufficient test norms for use with Vietnamese-speaking adults, the existing norms reported by Dick, Teng, Kempler, Davis, and Taussig (2002) can be helpful when used with caveats. The Cross-Cultural Neuropsychological Test Battery (CCNB) was developed by Dick and colleagues (2002) for the purpose of addressing cultural and linguistic issues associated with diagnosing dementia among diverse populations. Currently, it is the only test with norms for Vietnamese Americans. The CCNB has 11 subtests that assess six cognitive domains typically included in a dementia evaluation. Tests include the Cognitive Abilities Screening Instrument (CASI) (Teng et al., 1994); the Common Objects Memory Test (COMT), a visual memory test presenting pictures of 10 common objects over three trials with immediate, delayed, and recognition recall trials; Body Part Naming; Animal Fluency; Auditory Comprehension; Block Design; CERAD Drawing; Read and Set; Digits forwards and backwards; and Trail Making A. The battery takes about 1 hour 30 minutes to complete.

The standardization sample of the CCNB was based on 336 healthy adults and 90 demented patients from five target groups, including African American, Caucasian, Chinese American, Hispanic American, and Vietnamese American. There were 61 Vietnamese participants in the sample with ages ranging from 62 to 87 years ($M = 71.5$, $SD = 5.8$), and their educational level from 0 to 16 years ($M = 8.6$, $SD = 4.1$). Furthermore, among the Vietnamese sample, 97% spoke only Vietnamese and 56% did not read English (Dick et al., 2002). For the purpose of this review, we will only provide comparison with the Caucasian group, as most normative data for American neuropsychological tests are based upon predominantly White samples. When compared to the Vietnamese sample, the Caucasian group ($n = 70$) was significantly older ($M = 77.0$, $SD = 7.4$), with a higher level of education ($M = 11.4$, $SD = 3.9$).

The Caucasian group scored significantly better than the Vietnamese group on Trails A (Caucasians, $M = 51.0$, $SD = 21.4$; Vietnamese, $M = 83.9$, $SD = 58.0$), CASI

(Caucasian, $M = 91.5$, $SD = 5.2$; Vietnamese, $M = 85.7$, $SD = 11.0$), and the Modified Picture Completion (Caucasian, $M = 8.8$, $SD = 1.1$; Vietnamese, $M = 6.6$, $SD = 2.7$). The Vietnamese group ($M = 17.3$, $SD = 5.2$) produced significantly more animal names than the Caucasian group ($M = 16.3$, $SD = 4$) (Kempler, Teng, Dick, Taussig, & Davis, 1998). No differences were found on the remainder of the tests.

Although the CCNB is currently the only dementia battery that assesses cognitive function among a diverse ethnic population, clinicians should use it with caution. It is important for the clinician to consider the effects of age and education on test results. As reported by the test's authors, education affected performance on nearly every test and accounted for about 15% of the variance in scores. Besides the Hispanic American subsample, Vietnamese Americans had lower educational attainment than other target groups in the standardization sample. Despite the lower level of education, except for the aforementioned tests, the Vietnamese sample scored comparably to the older, but more highly educated Caucasian sample, and even performed better on animal fluency. These comparative test results may guide clinicians in test selection and interpretation with elderly Vietnamese clients and can particularly guard against false positives in diagnosing dementia.

Other Western neuropsychological tests have been translated into Vietnamese, which may facilitate administration to a primarily Vietnamese-speaking client. However, these tests do not have norms for a strictly Vietnamese sample, and thus test scores would have to be interpreted with caution. The Montreal Cognitive Assessment (MoCA; Nasreddine et al., 2005) is a 30-point dementia screen that incorporates tasks such as draw a clock, verbal fluency, and a mini trail making, along with typical orientation, attention, and memory items. The MoCA and its Vietnamese translation are available online at <http://www.mocatest.org/>.

The Bilingual Verbal Abilities Test (BVAT) (Munoz-Sandoval, Cummins, Alvarado, & Ruef, 1998) evaluates language skills in both English and Vietnamese, which may provide useful information for interpreting neuropsychological test scores on Western tests with a strong language component. The BVAT consists of three subtests from the Woodcock-Johnson Revised Tests of Cognitive Ability and Language Proficiency Battery-Revised: Picture Vocabulary (58 items), Oral Vocabulary Synonyms (20 items) and Antonyms (20 items), and Verbal Analogies (35 items). The test requires a bilingual administrator or interpreter and takes approximately 30 minutes to complete. Items are administered in English, and missed items are then administered in the client's native language. Norms range from 5 to 90.

Recommendations

1. Vietnamese patients may not readily volunteer personal, family, and medical information at the initial meeting. It is recommended that the neuropsychologist maintains a close communication with the patient's primary care physician and other family members. Also refrain from an extensive clinical interview during the first session. It is best to obtain information over a couple of sessions and from different informants. The patient's report

should be corroborated with an observer's report (e.g., spouse or other family member).

2. Since the vast majority of Vietnamese are unfamiliar with the procedures and contents of a neuropsychological assessment, it is critical to spend sufficient time to educate the patient and his or her significant other about the procedures, the assessment process, and how the results are used clinically.
3. Due to the high prevalence rates of PTSD and depression in this population, it is important for neuropsychologists to routinely assess for these potential confounding factors, as they may affect test results.
4. Levels of formal education are not always an accurate indicator of IQ or a good estimate of premorbid functioning. General intellectual functioning or premorbid functioning should be assessed within the context of cultural expectations and environmental demands. For instance, how did the patient overcome the economic hardships in his or her native country, endure the acculturative stress in the host country, or endure the political persecutions back in Vietnam.
5. When an interpreter must be used, the neuropsychologist should be aware of the following:
 - a. The interpreter's formal training and qualifications
 - b. The interpreter's native language skills and dialects, as well as English proficiency
 - c. The interpreter's knowledge of Vietnamese culture
 - d. The interpreter's familiarity with medical, psychological, and psychiatric terminologies

Case sample

CT is a 20-year-old, left-handed male who has been living in the United States for 2 years. Although CT was born and raised in Vietnam, he speaks both Vietnamese and Chinese. CT has a long-standing history of intractable seizure disorder. He experienced febrile convulsions at age 5 months and also has a history of meningitis in infancy. Nonetheless, he reportedly achieved the appropriate developmental milestones within the same time frame as his three healthy older sisters. It was not until the age of 5 years that he began experiencing recurring seizure activities with episodes during which he feels fearful and his vision is gradually obscured by an approaching and expanding shadow. At age 12 years, he began having secondarily generalized tonic-clonic seizures. Despite trials of multiple anticonvulsants, good seizure control has not been achieved. According to his mother, his schooling has been limited to home tutoring due to his seizures. Social interaction has also been restricted to the immediate family, not an uncommon way for his family to cope with the stigma of epilepsy.

Given the medically intractable nature of his seizure disorder, he and his family have been exploring possible surgical intervention through a local epilepsy surgery program in California. Presurgical workup thus far has included an MRI scan showing post-traumatic or post-ischemic changes within the left posterior parietal and

occipital cortex. A small focal area of gliosis was also observed within the right occipital subcortical white matter. An interictal SPECT study demonstrated mild decreased activity in the left temporal tip. EEG revealed frequent interictal spikes arising from the right occipital-parietal region.

To complete the first phase of the presurgical evaluation, CT will also be undergoing an extended inpatient video and EEG recording (through scalp electrodes) of seizure activities, and he has been referred for a neuropsychological assessment to obtain baseline cognitive status and to provide collateral data for the lateralization and localization of the seizure focus. The initial referral was made to the program's neuropsychologist. However, due to his very limited English, he was then secondarily referred to the second author, who is a Vietnamese-speaking neuropsychologist with specific training in epilepsy surgical workup.

CT came to his appointment accompanied by his mother and his sister. He was somewhat shy, and the above history was obtained through his medical records and an interview with his mother and his sister. He spoke Vietnamese with the dialect of people from the South, which is coincidentally familiar to the examiner.

As it was a surgical workup, a comprehensive test battery was employed. Test selection needed to take into consideration language and cultural factors while at the same time maintaining as much uniformity as possible with the standard surgical test battery. Consequently, the tests administered included TONI-3, WAIS-III selected subtests (Digit Span, Digit Symbol-Coding, Picture Completion, and Block Design), WMS-R (Visual Reproductions I and II and Mental Control), RAVLT (translated into Vietnamese), Color Trails 1 and 2, Boston Naming Test, Controlled Oral Word Association, Categorical Fluency (Animals), Judgment of Line Orientation, Rey-Osterrieth Complex Figure (Copy and Recall), Ruff Figural Fluency Test, Grooved Pegboard, and Wisconsin Card Sorting Test. The battery was overall weighted in favor of nonverbal tests to minimize language biases. It was believed that the TONI-3, as a nonverbal measure of intelligence, would provide a more valid estimate of his intellectual abilities than the WAIS-III, as some of the verbal subtests contain items that cannot be easily or appropriately translated into Vietnamese. Subtests such as Information and Comprehension contain culturally incompatible items. Although Vietnam adopted the Latin alphabet many years ago, there are differences between the English and the Vietnamese alphabet. Thus, Color Trails was chosen over the Halstead-Reitan Trail Making Test. In addition, with Controlled Oral Word Association, the letter F was substituted with the letter M, as F is not part of the Vietnamese alphabet. Logical Memory and Verbal Paired Associates from the WMS-R, standard memory tasks of the surgical testing protocol, were omitted, as neither could be reliably translated nor could substitution be made with retention of all test characteristics. While not ideal, the Boston Naming Test and Controlled Oral Word Association were included because lateralization and localization cannot be determined without assessment of language. However, interpretation will be tempered with qualitative analyses. As a general rule, interpretation will take into account potential confounds associated with the translation of test material and the lack of available normative data that are representative of CT's cultural, linguistic, and educational background.

The assessment yielded the following impressions:

1. Generally impaired executive functioning and select deficits in attention, which suggest dysfunction of the frontal lobe or its subcortical projections.
2. The presence of visuospatial difficulties and overall better recall of verbal information than the recollection of visual data support the relative involvement of the nondominant hemisphere.
3. Involvement of the dominant neocortex cannot be entirely ruled out in view of impairment in naming and phonemic verbal fluency. However, categorical verbal fluency, which is a more appropriate measure, linguistically and culturally, was intact. Further, with naming, CT correctly named 20 out of the first 30 "easier" items. Five of the items he was not able to name either did not exist naturally or were not common in Vietnam. The second half contained many items that did not have equivalent terminology in Vietnamese. Thus, language impairment may have been reflective of flawed instrumentation.

Subsequent to the completion of the first phase of CT's presurgical workup, the decision was made to proceed to the second phase of investigation rather than resective surgery, as both the imaging studies and the neuropsychological profile provided discordant data regarding a possible seizure focus. The patient was required to undergo an invasive study with implantation intracranial depth electrodes to record seizure activities during another hospital stay. Unfortunately, he became oppositional and combative and posed a danger to himself such that the study was necessarily aborted for the time being.

The ideal neuropsychological assessment of a minority non-English-speaking individual is to have the evaluation conducted by a well-trained neuropsychologist who speaks the same language and using tests developed specifically for that minority population. Of course, the ideal does not yet exist for Vietnamese patients. Nonetheless, despite the complexity of the situation, a reasonable evaluation providing clinically relevant information can be performed if care is taken to minimize language and cultural confounds. In this case, communication barriers as well as the potential pitfalls of testing via an interpreter were eliminated with the referral to the second author, who was familiar with the patient's dialect and was able to administer the tests in Vietnamese. (When there is no option other than the use of an interpreter, then recommendations mentioned above should be followed.) Further, to ensure the validity and reliability of the findings, tests given were carefully selected, keeping in mind possible cultural biases and omitting and substituting tests as necessary. Lastly, interpretation of the results took into consideration the cultural strengths and weaknesses of the testing instruments, qualifying outcomes to render more accurate conclusions.

Summary

With the continued increase in the Vietnamese American population, the need for cross-cultural neuropsychology remains imminent. This chapter addressed a number

of important issues that may affect the integrity of neuropsychological assessment results among Vietnamese Americans. We also examined the potential effects of PTSD on neuropsychological results among Vietnamese refugees who have undergone mass trauma. We discussed several important cultural factors, such as conceptualization of health and perception about the causes of dementia that may influence the assessment, diagnosis, and treatment for neurodegenerative diseases such as Alzheimer's. Finally, we investigated other factors that may affect neuropsychological assessment results, including the complexity of the Vietnamese language (i.e., regional dialects), the low levels of formal education among Vietnamese elders, and the use of an interpreter for non-English-speaking patients. All of these factors must be considered by those who conduct neuropsychological assessment among Vietnamese Americans. As the Vietnamese American population continues to increase steadily, we argue that experts should focus on the development of culturally and linguistically appropriate neuropsychological assessment instruments to meet the high demands of this growing population.

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12 Neuropsychology in China

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Brief description of country

China, officially known as the People's Republic of China, is located in eastern Asia. The country is bordered on the north by Mongolia, Russia, and Korea, on the south by Burma, Laos, and Vietnam, on the west by Nepal, India, and Kazakhstan, and on the east by the Pacific Ocean. With a landmass of 9.6 million square kilometers, it is the third largest country in the world, second only to Russia and Canada.

China is also the most populous country in the world, with approximately 1.3 billion people (Chinese Government, 2008). There are 56 ethnic groups residing in China. The overwhelming majority (91.6%) are Han, whereas the other 55 ethnic groups account for the remaining 8.4% of the population. A total of 54 languages are spoken in the country, with Putonghua being the official national language.

Although considered ethnically Chinese, Taiwan has been an independent territory for about 50 years, while Hong Kong and Macao have developed independently for 150 years. Hong Kong and Macao recently reunited with the Mainland in 1997 and 1999, respectively, becoming Special Administrative Regions (SARs). Despite unification, both still retain a high degree of autonomy from the Mainland in terms of political and economic systems, language, and culture. Similarly, developments in education, science, and technology also evolved differently from the Mainland. This includes the field of neuropsychology. Therefore, in the remainder of this chapter, references will be made to Hong Kong (and Macao) and Taiwan independently of Mainland China where appropriate.

Brief history of neuropsychology

China

Neuropsychology is a relatively young science in Mainland China with a history of about 20 years. The beginnings can be dated to 1987, when the Chinese Neuropsychology Association was founded and the first national neuropsychology conference was held. These two events signified the establishment of neuropsychology as an independent field of study in Mainland China. Since inception, the Chinese