

## CHALLENGES IN THE NEUROPSYCHOLOGICAL ASSESSMENT OF ETHNIC MINORITIES: SUMMIT PROCEEDINGS

Heather R. Romero<sup>1</sup>, Sarah K. Lageman<sup>2</sup>,  
Vidya (Vidyulata) Kamath<sup>3</sup>, Farzin Irani<sup>4</sup>, Anita Sim<sup>5</sup>,  
Paola Suarez<sup>6</sup>, Jennifer J. Manly<sup>7</sup>, Deborah K. Attix<sup>1</sup>,  
and the Summit participants

<sup>1</sup>Duke University Medical Center, Durham, NC, <sup>2</sup>Emory University, Atlanta, GA, <sup>3</sup>University of Central Florida, Orlando, FL, <sup>4</sup>University of Pennsylvania, Philadelphia, PA, <sup>5</sup>Minneapolis VA Medical Center, Minneapolis, MN, <sup>6</sup>HIV Neurobehavioral Research Center, San Diego, CA, and <sup>7</sup>G. H. Sergievsky Center and Taub Institute for Research on Alzheimer's Disease and the Aging Brain, Columbia University Medical Center, New York, USA

**Keywords:** Cultural; Neuropsychology; Proceedings; Summit; Diversity.

## INTRODUCTION

These proceedings document the Multicultural Problem Solving Summit, which was held in Waikoloa Village, Hawaii in February 2008. Welcoming comments were followed by a brief review of the history of the development of the Summit, selection of participants, structure, rules of conduct, and broad goals.

The idea for a Multicultural Problem Solving Summit, also now known as the 2008 Diversity Summit, was initially generated in the setting of the spring 2007 Consolidated Meetings of the American Psychological Association, which Drs. Deborah Attix and Jennifer Manly attended. Initially developed but unfunded as an APA interdivisional grant, the Summit easily garnered interest and support from other groups. Specifically, interest in the initiative rapidly followed distribution of the proposal to neuropsychological organizations and the Summit emerged as an event with inter-organizational support and participation. It should be noted that it was neither feasible nor necessary to canvass and appeal for support from every possible group having a vested interest in the Summit.

The selection of participants paralleled the evolution of the Summit. Initially, clinical neuropsychologists were selected to reflect or represent the APA Divisions of Clinical Neuropsychology and Ethnic Minority Affairs (APA 40 and 45) and the

---

Address correspondence to: Heather R. Romero, Neuropsychology Department, Duke University Medical Center, DUMC Box 3333, Durham, NC 27710, USA.  
E-mail: heather.romero@duke.edu

Accepted for publication: March 10, 2009.

directorates of APA (Science, Education, Practice, and Public Awareness). As funding for the Summit became inter-organizational, participants were added or reassigned to reflect that support. As management of "representation" became unwieldy, and to avoid potential imbalances or slights, efforts toward "representation" were largely abandoned in favor of invitation based on expertise. In the end, panelists were chosen to reflect key perspectives that needed discussion or to contribute as a function of their demonstrated expertise in an area critical to the Summit. Finally, each of these panelists was allowed to invite one other participant, in the hopes of populating the Summit with trainees or early career professionals with a strong commitment to diversity issues.

The overarching goal of the Summit was to develop a plan for the future of cross-cultural neuropsychology. Specific targets for discussion included the delineation of the proper use of ethnic norms, allocation of resources for research, scientific approaches to the study of multicultural neuropsychology, education and training, and the development and dissemination of products from the Summit. It was intended that the Summit would be an inspirational springboard from which many efforts would follow.

## PARTICIPANTS

**Deborah Attix**, PhD, ABPP/ABCN, Director, Duke Clinical Neuropsychology Service, Associate Professor, Division of Neurology, Duke University Medical Center.

**Desiree Byrd**, PhD, Assistant Professor, Departments of Psychiatry and Pathology, Mount Sinai School of Medicine.

**Mariana Cherner**, PhD, Assistant Professor in Residence, Department of Psychiatry, University of California San Diego.

**Ruben J. Echemendia**, PhD, Psychological and Neurobehavioral Associates, State College, PA.

**Daryl Fujii**, PhD, ABPP/ABCN, Department of Veterans Affairs, Pacific Island Health Care Services, Community Living Center.

**Robert Heaton**, PhD, ABPP/ABCN, Professor, Department of Psychiatry, School of Medicine, UC San Diego.

**James Holdnack**, PhD, Senior Research Director, Pearson.

**Farzin Irani**, PhD, University of Pennsylvania.

**Vidya (Vidyulata) Kamath**, MS, University of Central Florida.

**Jose Lafosse**, PhD, Associate Professor, Neuroscience Program & Department of Psychology, Regis University.

**Sarah K. Lageman**, PhD, Department of Rehabilitation Medicine, Emory University.

**John Lucas**, PhD, ABPP/ABCN, Associate Professor, Department of Psychiatry & Psychology, Mayo Clinic, Jacksonville.

**Jennifer Manly**, PhD, Associate Professor, GH Sergievsky Center and Taub Institute for Research on AD and the Aging Brain, Columbia University.

**Deborah Miora**, PhD, Private Practice, Beverly Hills, Assistant Professor and Program Director, Center for Forensic Studies@ Los Angeles, Alliant International University.

**Dan Mungas**, PhD, Professor, Department of Neurology, School of Medicine, University of California, Davis.

**Sid O'Bryant**, PhD, Assistant Professor, Department of Neurology, Texas Tech University Health Sciences Center.

**Antonio Puente**, PhD, Professor of Psychology, University of North Carolina Wilmington.

**Heather R. Romero**, MA, Seattle Pacific University, Intern, Duke University Medical Center.

**Anita Sim**, PhD, Minneapolis VA Medical Center.

**Glenn Smith**, PhD, ABPP/ABCN, Professor, Department of Psychology, Mayo Clinic, Rochester.

**Paola Suarez**, MA, SDSU/UCSD Joint Doctoral Program in Clinical Neuropsychology.

**Jerry Sweet**, PhD, ABPP/ABCN, Professor of Psychiatry and Behavioral Sciences, Feinberg School of Medicine, Evanston Northwestern Healthcare and Northwestern University.

**Frederick W. Unverzagt**, PhD, ABPP/ABCN, Professor, Department of Psychiatry, Indiana University School of Medicine.

**Larry Weiss**, PhD, Vice President, Psychological Assessment Products, Pearson.

## SPONSORS

Nominal support for the Summit was provided by:

Division 40 – American Psychological Association;

American Academy of Clinical Neuropsychology;

National Academy of Neuropsychology;

American Psychological Association – Office of Ethnic Minority Affairs;

American Psychological Association – Science Directorate.

## STRUCTURE OF THE SUMMIT

After welcoming comments, the organization and goals for the Summit were reviewed. The format of the Summit consisted of short, 4-minute panelist presentations within topical sessions designed to provide an organizational structure and to initiate discussion. With each session, presentations were followed by lengthy and animated discussion. Drs. Manly and Attix limited discussion somewhat due to time constraints. The Summit was characterized by thoughtful discussion during each of the sessions, which were as follows.

### **Session 1: Innovative Scientific Approaches to Advance Neuropsychological Assessment of Ethnic Minorities**

Presentations:

- (1) Jennifer Manly: *Deconstruction of race for neuropsychology: Acculturation, quality of education, and genetic markers*
- (2) Dan Mungas: *Psychometrics and cross cultural neuropsychology*

## **Session 2: Development and Proper Use of Ethnic Group Norms**

### **Presentations:**

- (1) Robert Heaton: *When it is not appropriate to use demographic adjustments and why*
- (2) Glenn Smith: *Understanding diagnostic validity for ethnic group norms*
- (3) John Lucas: *Recruitment of ethnic minorities for normative studies – lessons learned and future challenges*
- (4) Fred Unverzagt: *Cognitive assessment with older African Americans: An epidemiological perspective*
- (5) Larry Weiss & James Holdnack: *Mediators of IQ discrepancies and test publisher issues*

## **Session 3: Current Challenges to Neuropsychological Practice with Ethnic Minorities**

### **Presentations:**

- (1) Daryl Fujii: *Daily challenges to the clinician assessing ethnically and linguistically diverse people*
- (2) Mariana Cherner: *Needs and challenges in neuropsychological assessment of Spanish speakers*
- (3) Antonio Puente: *Ethnic minorities and public policy: The problem with shifting demographics and health insurance coverage*

## **Session 4: Directions for Education, Training, and Public Awareness**

### **Presentations:**

- (1) Desiree Byrd: *Recruitment and retention of ethnic minority neuropsychologists*
- (2) Deborah Attix: *Impression management: Public information, milieus, and outreach*

## **Session 5: Directing Organizational Change for a More Diverse Neuropsychology**

### **Presentations:**

- (1) Jerry Sweet: *Preparing the field for change: Facilitating infusion of diversity*
- (2) Ruben Echemendia: *Leadership development among ethnic minorities*

The Summit adjourned after a discussion of the preliminary products that will likely result from the work of the day and future directions.

## **SESSION 1: INNOVATIVE SCIENTIFIC APPROACHES TO ADVANCE NEUROPSYCHOLOGICAL ASSESSMENT OF ETHNIC MINORITIES**

### **Presentations**

- Jennifer Manly: *Deconstruction of race for neuropsychology: Acculturation, quality of education, and genetic markers*
- Dan Mungas: *Psychometrics and cross cultural neuropsychology*

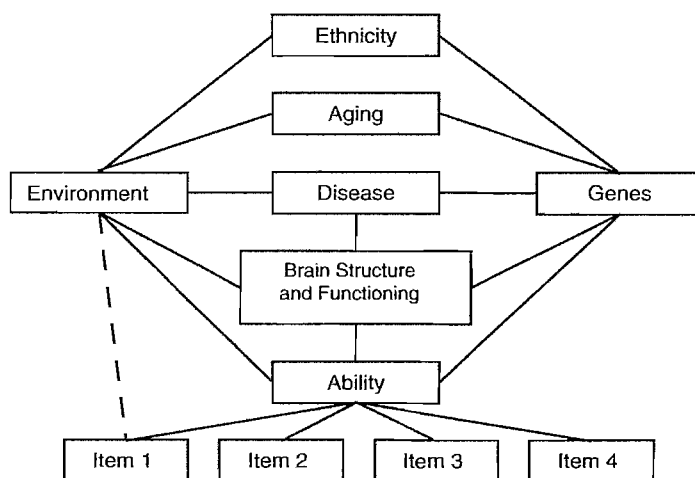
## Discussion

The Summit began with a discussion of theoretical and psychometric challenges related to the neuropsychological assessment of ethnic minorities. The importance of deconstructing race as a construct was outlined, followed by a discussion of specific variables with known or suspected influence on cognitive performance. The session concluded with a discussion regarding the clinical and practical implications of further study in this area and the instrumentation and methodological factors that must be considered to understand the effect of race, culture, and education on cognitive test performance.

The initial presentation outlined why the deconstruction of race is essential. Race itself was noted to have tenuous scientific meaning and the potential for racial classifications to increase misinterpretation of test findings was acknowledged. The value of the construct of race is that it serves as an easily assessed proxy for more meaningful but complex variables. Studies were reviewed that demonstrate how these meaningful variables, such as acculturation and indicators of quality of education, account for significant proportions of racial and ethnic group differences in cognitive test scores. In the course of the discussion, members identified the following variables for further study: reading level, acculturation, time in the United States, English fluency, English versus Spanish reading level, nationality of origin, quality of education, length of time in school, educational resource variables (e.g., per student expenditures, teacher student ratios, etc.), wealth/income, and early life experiences. Several participants stressed the importance of expanding the search for variables that might help explain ethnic/racial differences in test performance such as differences in educational and health environments, patterns of geographical change in populations (e.g., immigration among or migration within countries), historical cohort effects, and cultural differences that may affect the expression of cognitive abilities. For example, high achievement performances in Japanese and Korean children who attend a 6-day school week were noted to be a reflection of cultural differences in expectations of achievement rather than a function of race per se. The majority of participants agreed that a greater understanding of the variables that influence performance on neuropsychological tests would help reveal the "real" source of variance in predicting individual and group differences, better inform norms, and support more sophisticated and accurate clinical interpretation of neuropsychological data.

A model capturing relationships among variables potentially relevant to cognitive performance was presented (Figure 1; Mungas, 2006). This model illustrates how ethnicity, aging, and disease may influence cognitive ability through environment, genes, and brain structure. It was noted that links between ethnicity and cognitive ability within the model are the result of multiple relationships. Participants acknowledged that a detailed study of test variables would require large-scale data collection efforts with sufficient power to apply appropriate statistical techniques, such as item response theory, differential item functioning, and structural equation modeling. It was noted that convenience samples would not be ideal for such work.

In the course of the discussion several concerns were raised about the value of deconstructing race for cognitive assessment. If race serves as a powerful proxy for



**Figure 1** Model of the complex relationship between ethnicity and cognitive ability, modified from Mungas (2006).

multiple background factors, then it may be the most efficient and parsimonious variable for clinicians to use. The possibility that causes and effects will be confounded when these detailed variables are used was exemplified in one of the Mayo's Older African Americans Normative Studies (MOAANS) project studies. Results demonstrated that adjusting test scores for reading level actually reduced the ability of neuropsychological measures to correctly classify African-Americans with cognitive impairment (Lucas et al., 2005). Given that the African-American participants in this study had relatively uniform educational backgrounds, it is possible that the cohort differences in reading level were more reflective of individual differences in native cognitive ability than environmental differences. There was agreement among participants that it is important to consider *when* deconstruction of race is appropriate for clinical or research purposes, and that it is critical to clearly delineate the rationale and guidelines for the use of variables that represent cultural and educational experience.

The discussion then turned to the practical and clinical implications of this research. Some participants expressed concern that the potential clinical utility of breaking down the social and biological factors associated with race/ethnicity would not justify the requisite efforts of doing so. If deconstruction of race and ethnicity into other variables results in practitioners becoming paralyzed with complex formulas and lack of precision in norms, it may be that this work is better conceptualized as a long-term research enterprise rather than for any clinical diagnostic applications in the foreseeable future. Although participants agreed on the importance of certain constructs (such as educational quality, childhood socioeconomic status, etc.) in terms of cognitive development, there was some discussion of whether these variables would have uniform impact across age and cultural groups. During the discussion, the importance of recognizing when group versus individual statistics were appropriate was also emphasized; for example,

a significant group difference in a group background variable may or may not help classify individuals' performances within groups. Similarly, it was noted that test publishers may be reluctant to publish data separately by racial/ethnic group for fear that it may be misused to overpathologize or deny appropriate services to certain groups. Additionally, demographic adjustments to normative data are not validated for the use in predicting future academic or employment performance, and laws exist to prohibit the use of race-based norms in employment decisions.

The discussion continued with a focus on the instrumentation and methodological factors that must be considered in constructing ethnicity corrections for neuropsychological norms. Participants acknowledged the challenge of finding representative samples capable of providing data in all the required cells, noting that statistical methods are only as good as the samples employed. In this context, participants agreed that there is a need to return to educating neuropsychologists about basic measurement principles, including the consideration of reliability and validity across groups, test selection and validity for the identified purpose (e.g., neurodiagnosis versus prediction of everyday functioning), and selection of norms guided by the referral question.

There was consensus among participants that the field would benefit from guidelines for neuropsychological practice among ethnic and racial minorities. These practice guidelines might address how to determine when neuropsychological tests are appropriate versus when to rely on clinical behavioral or collateral informant interview data, the importance of an appreciation of the psychometric properties of tests across cultural groups, and knowledge of when to use demographic adjustments. The guidelines should include a specific focus on appropriate and inappropriate uses of demographic adjustments, as well as a discussion of the risks of overpathologizing groups or denying appropriate services, and details of limitations to the application of various normative standards. Other possible directions for advocacy within the field were the routine inclusion of ethnic, racial, and educational information in published manuscripts and in meeting presentations. Finally, the participants agreed that a more thorough understanding of predictive variables and the potential costs and benefits of deconstructing race for use in neuropsychological practice would benefit the field.

## SESSION 2: DEVELOPMENT AND PROPER USE OF ETHNIC GROUP NORMS

### Presentations

- Robert Heaton: *When it is not appropriate to use demographic adjustments and why*
- Glenn Smith: *Understanding diagnostic validity for ethnic group norms*
- John Lucas: *Recruitment of ethnic minorities for normative studies – lessons learned and future challenges*
- Fred Unverzagt: *Cognitive assessment with older African Americans: An epidemiological perspective*
- Larry Weiss & James Holdnack: *Mediators of IQ discrepancies and test publisher issues*

## Discussion

The following main topics emerged from the presentations and the group discussion: fundamentals of norms and demographic corrections, theoretical considerations concerning the use of corrections and expected standards of functioning, practical approaches to the use of ethnically corrected norms, norm development, and recruitment issues.

Descriptive and diagnostic uses of data were identified as the two primary applications of norms, with the limitations of the diagnostic validity of neuropsychological data that is not collected for diagnostic purposes (i.e., normative data) being acknowledged. Participants agreed that, in the absence of premorbid test data, use of an estimate of "normal" performance from demographically similar individuals is best practice.

Participants discussed how performance on neuropsychological tests is driven by brain-based ability that springs from a complex context that includes diseases, genes, age, gender, education, occupation, ethnicity, and a person's cultural exposures during development. Many of the exposure-based factors (e.g., education, occupation, culture) vary intrinsically across samples; that is, there are qualitative differences in the variable based on when they occur in time (i.e., generationally) and even where they occur geographically. Complexity is further increased by the fact that the variables affecting neuropsychological performance interact in ways that may not be fully known and are likely to vary across samples and generations. Participants noted that this complexity is not likely to be well characterized or modeled by demographic adjustments drawn from a generic sample.

On the other hand, when generational and geographic factors are reasonably constrained, then "local" norms drawn from the population under study provide a direct means of capturing and accounting for the complex exposures and interactions and provide a clearer basis for interpreting disease-produced variability in neuropsychological performance. While local norms can provide a reasonable basis for interpretation, participants agreed that it is still necessary that test scores be integrated with other clinical information and understood within a personal, individual context when used to form a diagnosis.

The diagnostic validity of ethnic group norms was further discussed. Several participants emphasized the utility of biomedical diagnostic models, which identify conditions of interest (COI) and evaluate probabilistic statements. These methods are used to determine the probability of group membership (i.e., diagnosis) from neuropsychological or other test scores. In contrast, neuropsychological research has historically focused primarily on prediction of test scores based on known group membership and in this manner disease samples have helped establish the validity of measures and norms. However, such scores are not established as a clear prediction of brain disease in an individual. Probabilistic statements were reviewed, including the following concepts adapted from Sackett, Haynes, Guyatt, and Tugwell (1991) and Fletcher, Fletcher, and Wagner (1996):

- SPIN – When specificity is high, a positive result rules in the presence of COI
- SNOUT – When sensitivity is high, a negative result rules out the presence of COI



The clinical utility of these concepts is readily identifiable in likelihood ratios (LR), which are the expression of the risk associated with certain test scores. A positive LR expresses the risk or probability of the obtained positive test result in the presence of the COI divided by the probability of an obtained positive test result in the absence of the COI  $\{LR+ = \text{Sensitivity}/(1 - \text{Specificity})\}$ . Similarly, a negative LR expresses the probability of the obtained negative test result in the absence of the condition divided by the probability of the obtained test result in the presence of the condition  $\{LR- = \text{Specificity}/(1 - \text{Sensitivity})\}$ . Several participants emphasized that these theoretical considerations have great relevance for norm development and use. For example, factors that increase specificity, such as norms that are corrected for ethnicity, tend to improve LR+ far greater than a comparable increase in sensitivity.

The discussion continued with a focus on theoretical considerations related to the use of corrections and expected standards of functioning. Participants noted that the field of neuropsychology has traditionally used group descriptive statistics to evaluate tests (via means, standard deviations, frequencies, and correlation coefficients) and more recently has begun to use tests to aid clinical diagnosis for individuals. However, it was noted that many measures have not been demonstrated to effectively discriminate between individuals in various groups. Participants agreed that appropriate use of norms is related to accurately determining the questions the neuropsychological evaluation is intended to answer. Different norms might be used when evaluations are diagnostic, and likewise, the use of norms in descriptive evaluations will be guided by the expected or standard level of functioning against which performance will be measured.

An illustrative analogy was discussed to further explore the use of demographic corrections when evaluating the absence or presence of a disease or describing a level of functioning. Using the analogy, participants debated whether “a bus is a bus” regardless of reference group, or should the “bus” change for certain groups. For instance, does an elderly individual using public transportation in New York City have to be able to get on the same bus that goes at the same rate regardless of the condition of the riders—or should the “bus” be slower for older individuals? Should functional expectations, such as speed, cognition, or occupational demands, change for different groups? When is the normative sample not appropriate in all population groups, and how do neuropsychologists decide what should be corrected for? In general, participants supported the perspective that when neuropsychological testing is being used to characterize an absolute level of functioning or classification, such as when determining the need for accommodations or services, ethnicity corrections are often not useful and use of census or age-based norms are recommended. Several participants also cautioned against using demographic corrections other than for age in capital punishment cases. During this portion of the session there was an emphasis on the need to carefully determine against which normative standard an individual’s performance should be considered. Participants also discussed situations in which functioning could be described relative to an individual’s appropriate demographic group membership. While acknowledging these differing perspectives, participants agreed that the question a neuropsychologist is answering regarding cognitive or everyday functioning directly relates to the appropriate selection of descriptive (e.g., the person has low

average intelligence or is mentally retarded) or diagnostic (e.g., the person evidences an acquired cognitive impairment) approaches to the interpretation of neuropsychological data.

The discussion continued regarding the appropriate use of norms, including the utility of age versus ethnicity, and the importance of distinguishing between race and ethnicity. Participants stressed the need for practice guidelines to help inform neuropsychologists and the varied disciplines that consult with neuropsychologists (e.g., lawyers) on the appropriate use of demographic adjustments. In the context of discussing issues specific to forensic neuropsychology, some participants cautioned against using IQ as a standard and expressed a need for more valid classifications in capital cases. Areas warranting study were mentioned, including identification of relevant variables to study, especially in low-SES groups, as well as a need to focus on functional outcomes (e.g., developmental disability) rather than IQ. Participants also expressed concerns regarding over-reliance on test scores and emphasized the importance of the clinical interview and pathognomonic signs, in conjunction with test scores, to conduct an integrated and thorough assessment of an individual.

The role of education, development, language, and cultural background, and how these impact testing and the selection of demographic versus census norms were considered throughout the entire Summit. There was agreement that practical approaches to the use of demographically corrected norms are needed. Some examples of instances when demographic corrections are useful, may be useful, and are not useful were considered and are summarized below.

- A. Demographic corrections *are* useful when they are used to identify and characterize acquired neurocognitive impairment in an adult who:
  - (1) is a native of the country of assessment;
  - (2) developed normally;
  - (3) had a mainstream education (e.g., no special education);
  - (4) speaks English as his/her first language (for U.S. norms).
- B. Demographic corrections are *sometimes* useful (i.e., should be used with caution as the appropriateness of the norms is uncertain) to help identify and characterize acquired neurocognitive impairment in:
  - (1) teenagers or young adults who have not completed their education;
  - (2) adults who may have had a mild developmental disorder (e.g., mild or specific learning disorder, some psychiatric conditions);
  - (3) anyone with a linguistic, cultural or educational background that would be unusually or poorly represented in the normative subject sample (e.g., ESL, someone partly educated in another country).
- C. Demographic corrections are *not* useful and are not recommended:
  - (1) to characterize "absolute" levels of functioning in the abilities assessed (e.g., is the person disabled?). In such a case, it is recommended to use census or age-based norms;
  - (2) to identify or characterize possible acquired impairment in capital punishment cases or when determining qualifications for special services;

- (3) in cases of possible acquired impairment in individuals who have developmental disability (including mental retardation), severe psychiatric disorder such as schizophrenia, etc;
- (4) to characterize acquired cognitive impairment in people who have major background differences from people in the normative sample (e.g., non-English, ESL);
- (5) for predicting future performance in employment or academic settings;
- (6) for employment selection decisions (laws exist that prohibit the use of race-based adjustments for this purpose).

The discussion then turned to development of normative standards for neuropsychological tests and recruitment issues as final discussion points. Participants agreed that there is continued need to understand how demographic variables impact each other (e.g., education and ethnicity) and how these variables impact the validity of the test scores. Test publishers expressed a desire to receive guidance from neuropsychologists to identify a comprehensive and critical list of background variables of interest clinically and for research. Interactions between demographic variables were noted to be complex and sometimes group specific. For example, although accounting for parent education and income decreased the effect of race and ethnicity on FSIQ score among African American, Hispanic, and Caucasian individuals, the amount of variance that these variables accounted for within each group was significantly different. Participants noted that the enormous cost of recruiting and assessing large cohorts needed to evaluate multiple relevant variables of interest is usually prohibitive for individual researchers and even for test publishing companies. Federally and foundation-funded research grants may be a potential resource for facilitating partnerships between neuropsychological researchers and test publishers in order to obtain high quality, large cohorts of racially and ethnically diverse individuals for norms development. Since adequate racial and ethnic diversity is also usually lacking among the clinical cases collected in order to validate norms, collaborations could potentially improve both clinical and normative sample development.

Several participants expressed concerns about the possible misuse of demographic adjustments, including errors in the application and interpretation of race/ethnicity-specific norms. Such errors could result in over- or under-diagnosis, as well as use of adjustments when the purpose of testing is descriptive (e.g., determination of mental retardation). Summit participants discussed the rationale for separate release of "traditional" manuals from manuals providing demographic adjustments. The group was reminded that the vast majority of users of the Wechsler scales do not practice in diagnostic settings where demographic adjustments would be appropriate, such as school settings for determining the need for educational accommodations or services. The test publishers who were present noted that sequential and separate publication of "traditional" norms and demographically adjusted norms avoids delayed publication of the instrument, but also promotes careful consideration of the appropriate normative standards. All of the Summit participants agreed that more explicit guidelines for use of demographic adjustments would be of benefit to the entire field.

Numerous barriers to recruitment of ethnic minorities for normative studies were discussed, as outlined in the report on minority recruitment and retention by the NIA-funded Centers on Minority Aging and Health Promotion (Levkoff & Sanchez, 2003). These included barriers at all levels, including the research institution collecting the norms, research team, community, and individual participants. Examples of barriers at each level were provided, and recommendations to improve recruitment were discussed. Some of the more fundamental solutions to problems associated with minority recruitment include in-home evaluations or placement of research assistants on-site at community centers rather than asking participants to travel outside the community to the research institution; engagement of community leaders in the research process; development of outreach programs to give back to communities (e.g., health fairs); and seeking out local marketing companies to help develop appropriate recruitment materials. In general, the group agreed that individuals seeking to pursue research in an ethnic minority community should be prepared to identify and understand all levels of influence and barriers in their institution and community of interest, identify mutually beneficial immediate and long-term goals, and make efforts to maintain ties and leave something positive behind once the research project ends. Summit participants also underscored the importance of investigators including a specific plan to overcome barriers to minority recruitment in their research grant applications, and to prepare a realistic budget to adequately fund the expenses needed to facilitate such recruitment efforts.

### **SESSION 3: CURRENT CHALLENGES TO NEUROPSYCHOLOGICAL PRACTICE WITH ETHNIC MINORITIES**

#### **Presentations**

- Daryl Fujii: *Daily challenges to the clinician assessing ethnically and linguistically diverse people*
- Mariana Cherner: *Needs and challenges in neuropsychological assessment of Spanish speakers*
- Antonio Puente: *Ethnic minorities and public policy: The problem with shifting demographics and health insurance coverage.*

#### **Discussion**

The focus of this session was identification of the considerable challenges inherent to the practice of neuropsychology regarding the assessment of ethnic, linguistic, and cultural minorities. The increase in the demand for services in the context of limited professional and psychometric resources was reviewed, followed by an extensive discussion of language variables and their impact on elements of clinical neuropsychological practice. Final discussion points included an evaluation of the use of translated tests, interpreters, and bilingual psychometrists to evaluate non-English-speaking patients. Language fluency served to illustrate the complexity of current challenges in clinical practice serving ethnic, linguistic, and cultural

minorities. Throughout the discussion, participants agreed that there is an urgent need to effectively address these challenges.

The discussion began with a review of statistics showing the growing Spanish-speaking Latino population in the United States. Statistics from the Pew Hispanic Center demonstrate the lack of Spanish speaking professionals in the context of a growing Latino population and limited health care access. Spanish is the fourth most common language spoken in the world, representing approximately 30 million native Spanish speakers with variable English proficiency. Moreover, Latinos are a heterogeneous population with variability in Spanish dialects, immigration patterns, and education quality. There has been a 50% increase in the U.S. Latino population, only 30% are U.S. born, and 37% do not have medical insurance. In contrast, there are 115 members of APA (less than 1% of U.S. psychologists) who identify themselves as Spanish speakers and only 40 members of the Hispanic Neuropsychological Society (less than 1% of U.S. neuropsychologists). These data clearly demonstrate the great need for neuropsychologists who are trained in cross-cultural neuropsychology and qualified to work with the large and growing population of Spanish speakers in this country. Even fewer U.S. neuropsychologists have any significant familiarity with most other ethnic minority groups in the U.S.

Discussion then focused on fundamental variables related to language fluency and their impact on neuropsychological evaluation. Numerous dimensions of English language acquisition should be considered when assessing language fluency, as acquisition varies among individuals who speak English as a second language. Assessment of English language fluency begins during the interview and includes an assessment of the frequency and context of language use, the extent to which languages are blended into composite languages (such as "Spanglish"), the level of receptive and expressive English skills, the quality of English education, dialect, and acculturation issues. Participants again expressed a need for clinical guidelines to direct neuropsychologists conducting evaluations of minority patients, particularly when language fluency intensifies the complexity of the cross-cultural evaluation.

Specific areas of clinical practice that are affected by language fluency were also identified and discussed. There is difficulty in determining the validity of test scores or even longitudinal outcomes when patients who speak English as a second language are examined in English. Some made specific suggestions to improve the assessment of ethnic minorities, including the possible benefit of test developers incorporating a brief screen of receptive and expressive vocabulary during standardization studies, the development of multiple choice or synonym format vocabulary test validated across different ethnicities, and the utility of studying the distribution of scores on neuropsychological measures across ethnicities and levels of function. Potential research questions were also discussed, including determination of the rates at which participants with equivalent levels of everyday functioning score below expectation on tests, and exploration of when and why such differences among groups occur.

Current methods of evaluation of non-English speaking patients were critiqued, including the use of translated tests and the use of interpreters.

Participants first discussed the validity of using translated tests across populations. Site translation, which refers to the practice of quickly translating a test with no standardized procedures, was discouraged. Formal development of tests for Spanish speakers was considered. It was noted that many Harcourt instruments have been translated into other languages, and these could possibly be made available on loan. The scope and availability of these translations need to be publicized. However, the significant test development expense of translations was acknowledged, along with the lack of sufficient consumer demand to offset costs. Additional limitations include the unknown equivalency of the validity of translated tests, such as FSIQs from translated versions varying by country-specific factors (e.g., gross national product and national education expenditures). There was general agreement that neuropsychologists need to take responsibility for the development of tests and norms and this will require personal efforts in advocating for research funding by lobbying government, institutional, or private funding sources, or by grafting test development research onto existing projects.

The use of interpreters was then discussed. In general, the use of family members as interpreters was discouraged. It was agreed that whenever possible, interpreters should be trained in a neuropsychological context to maintain standardized administration. The consequences of lack of standardized queries or interpretation of test responses by interpreters lacking such training were highlighted. It was also noted that interpreters can play a role in educating the neuropsychologist. For example, interpreters can be asked about cultural information and can make suggestions about how to frame certain neuropsychological concepts in a culturally sensitive manner. The creation of a training video to illustrate the proper use of an interpreter was suggested. Participants agreed that specific guidelines regarding the use of interpreters during test administration need to be included in practice guidelines.

The use of bilingual psychometrists as a step towards addressing the challenges of assessing non-English-speaking patients was then thoroughly considered. The roles of bilingual psychometrists in test administration, as well as providing assistance with the clinical interview were discussed. It was noted that bilingual psychometrists might become interested in neuropsychology and pursue further education and training, and as such may impact the recruitment of additional minorities into the field and increase the number of cross-cultural neuropsychologists. However, several expressed concern that an increase in bilingual psychometrists may not be critical when obstacles to health care access limit the presentation of non-English-speaking patients for neuropsychological evaluation. Some also expressed interest in empirically comparing groups evaluated by a bilingual psychometrist versus an interpreter to determine whether results differ.

At the conclusion of the session, the need for guidelines was again emphasized by participants. Practice guidelines could provide not only standards to guide practice, but also potentially direct institutional change regarding the benefit of hiring and using bilingual psychometrists to address lacking services for ethnic minorities.

## SESSION 4: DIRECTIONS FOR EDUCATION, TRAINING, AND PUBLIC AWARENESS

### Presentations

- Desiree Byrd: *Recruitment and retention of ethnic minority neuropsychologists*
- Deborah Attix: *Impression management: Public information, milieus, and outreach*

### Discussion

This session focused on future directions for education and training of ethnic minority students, as well as issues related to public awareness of and access to neuropsychology. Significant portions of the discussions were contributed to by the trainees, who offered a valuable current perspective on training issues.

**Part I: Education and Training.** Obstacles to recruitment and retention of ethnic minority neuropsychology graduate students were initially discussed. Identified barriers to recruitment included an over-emphasis on GRE scores for admission to graduate school, limited exposure to neuropsychology prior to graduate school, and limited funding mechanisms. Several participants noted that minority fellowships are occasionally offered, but tend to be available in remote places where minorities prefer not to move. Recruitment and retention barriers also include lack of mentorship from a faculty member with understanding of diversity issues, limited support related to diversity issues, mediocre training in cross-cultural neuropsychology, limited or no minority faculty, and insufficient research of interest to some ethnic minority trainees.

The discussion then focused on developing suggestions to aid in efforts to increase recruitment and retention of minorities (also see Section 5). Ideally students would be exposed to neuropsychology earlier in their academic careers by means of increased networking at the high school and undergraduate levels (i.e., the pipeline approach). Other strategies proposed included encouraging neuropsychologists to act as guest speakers in public schools and participating with State Psychological Associations that have mentoring programs. Several participants noted that mentorship can emphasize the value of academia and expose students to various aspects of neuropsychology relevant to their interests and training level. Additional recruitment mechanisms include the possibility of using flexible entrance criteria that may place a reduced emphasis on GRE scores, as well as increased attention to internal and external funding mechanisms (e.g. minority fellowship programs), particularly since these programs often provide financial support, resources, and guidance. The value of organizational support of pipeline initiatives was stressed, such as NAN offering free registration to undergraduates in the city where the conference is held each year.

Participants further discussed the importance of demonstrating sincere efforts to recruit minority students and faculty by: (a) showcasing recruitment initiatives on websites and program materials, (b) having diversity committees meet with potential applicants, and (c) increasing availability of minority faculty members as well as non-minority faculty members who are sensitive to diversity issues.

In general, participants agreed that greater efforts could be made to recruit faculty who can provide training in cross-cultural neuropsychology and are interested in conducting cross-cultural research. Several expressed reservations about matching faculty to students according to racial or ethnic identity when recruiting faculty/students.

This discussion concluded with a brainstorming session on additional ways to recruit and retain ethnic minorities in the field of neuropsychology. Greater implementation of community outreach and development of support networks in the community (e.g., Association of Black Psychologists) were considered. Additional suggestions for retention efforts included increasing support to graduate students through peer mentoring, encouraging minority student participation in the development of training priorities and opportunities, implementation of local programs to help with specific skills (e.g. writing, research, clinical practica), and increasing sensitivity of existing faculty and students to diversity issues through changes in environment and faculty training. The importance of creating an environment of respect where experiences are openly addressed and brought into training classes was discussed. The need for effective mechanisms to provide feedback or address racism during training was also established. While some suggested that standards and criterion for diversity training could be elevated, others expressed concerns that APA accreditation feedback would not suffice given the power differential and the hesitancy of some students to share concerns with the accreditation committee. Throughout this discussion, the need for operationalizing diversity guidelines relevant to neuropsychological assessment was identified as a priority and the importance of strong mentorship throughout individuals' careers was emphasized.

**Part II: Public Awareness.** In the second half of this session, public awareness and access to neuropsychology were discussed. Identified barriers to access included a lack of minority public awareness of the value of neuropsychological services, lack of medical insurance, as well as language and immigration status issues. The impact of the limited number of providers trained in cross-cultural neuropsychology was also noted. These concerns were discussed with acknowledgement of the historical context of research that can continue to fuel community distrust of medical research, and, at the same time, the clear need for research that is relevant to minority communities.

The discussion then focused on identifying ways to improve public awareness of services and increase access to the system and especially to cross-cultural neuropsychologists. Further education of and outreach to communities were proposed as ways to address entrenched community distrust. Examples of community impression management were offered, such as placing Spanish translations of the Division 40 or NAN brochures in neurology offices. The possible impact of providing educational materials to referral sources and patients was also highlighted.

The discussion then re-focused on concepts previously introduced in Session 2 regarding the recruitment of ethnic minorities for normative studies. Participants acknowledged that outreach efforts are ideally based on partnerships that link needs with resources in clinical and research settings. In such partnerships, the relationships among the community, patients, and research participants should



practice guidelines and or standards related to the practice of cross-cultural neuropsychology, would be very helpful.

Discussion then focused on developing a paradigm shift among neuropsychology practitioners. Greater dispersion of data that demonstrate the need for recruitment of individuals from diverse ethnic backgrounds to the field is necessary. Further, it was noted that inclusion of diversity information in journals is approximately 21.5%<sup>2</sup> (O'Bryant, O'Jile, & McCaffrey, 2004). In the course of the discussion, members generated five action points to encourage change in practitioners: (a) develop an expectation for diversity topics as they pertain to research published in journals (primarily managed by journal editors), (b) foster an expectation for diversity in programs and meetings, (c) publish practice guidelines (including an emphasis on reporting ethnicity in clinical reports and education regarding appropriate use of demographic corrections), as previously addressed in Sections 2 and 4, (d) promote inter-organizational cooperation for maximal use of limited resources, and (e) disseminate proceedings from this meeting. Supporting initiatives that designate minority participation in the governance of professional associations was noted as a possible strategy. Finally, it was suggested that the empirical evaluation of diversity coverage in journals and professional conferences would appeal to the scientist-practitioner identity of our colleagues.

Methods for addressing diversity on an organizational level were also discussed, with an emphasis on building infrastructure and preparing organizations for change. Several stated that organizational change is best accomplished from within the organization to facilitate development of specific, relevant organizational goals. Individuals within the organizations, and especially those serving on committees, are in a position to motivate institutions and organizations having resources that provide incentives to increase ethnic diversity. However, given the limited resources available to many organizations, members agreed that inter-organizational cooperation regarding use of personnel and instruments is critical. Some participants noted that inter-organization mechanisms could provide infrastructure for important efforts, such as updating web-based normative databases and diversity training modules.

These discussions led back to a brief exploration of instruction regarding the use of demographic corrections. Test-publishing company representatives expressed concern that their including informative material in test manuals to educate practitioners about the appropriate use of demographic corrections would not be read by those who could benefit from it, and suggested that such instruction would be more effectively disseminated by the Summit group. They also expressed a preference for using a different term because "demographically corrected norms" might imply inaccuracies in the original norms. Participants agreed that there was a need for increased dialogue between test publishers and practitioners in the field of clinical neuropsychology, and it was suggested that other options for future test and normative data development be pursued, rather than depending only on the efforts of for-profit companies.

---

<sup>2</sup>During the Summit, this number was reported as 2% and is corrected here for accuracy.

be mutually beneficial. The partnership of an Alzheimer's Disease Research Center African American Outreach program with a community church to form a mutually beneficial alliance was discussed as an example. The first phase of this relationship prioritized building trust, providing education, and identifying community leaders. The second phase witnessed the fruition of the initial groundwork, with a partnership forged for all phases of research. In this model, community and researchers work together at all points, including the research design, participation in research, interpretation of results, and dissemination of findings. Using this approach, recruitment numbers have increased and additional partnerships are developing. Future directions include identification of community outreach guidelines to enhance access and partnerships in both clinical and research settings.

## **SESSION 5: DIRECTING ORGANIZATIONAL CHANGE FOR A MORE DIVERSE NEUROPSYCHOLOGY**

### **Presentations**

- Jerry Sweet: *Preparing the field for change: Facilitating infusion of diversity*
- Ruben Echemendia: *Leadership development among ethnic minorities*

### **Discussion**

The focus of this discussion was how to prepare the field of neuropsychology for a paradigm shift toward cross-cultural neuropsychology. Past efforts to increase the number of ethnic minority neuropsychologists were reviewed, followed by an extensive brainstorming session on new ways to facilitate an infusion of diversity into the field. It was noted that strategies for effecting change would require different efforts for ethnic minorities relative to other minority groups (e.g., women). Past strategies include the use of inducements, such as high school and college scholarships, outreach and education activities, financial support for attendance at meetings, summer clerkships, as well as marketing. A considerable amount of time was devoted to generating ways to increase recruitment of individuals from diverse backgrounds into the field, in order to solve the "pipeline problem" (i.e., residencies and entry-level job positions represent the outcome of diversity efforts and are constrained by the numbers of individuals entering the metaphorical pipeline years earlier). The need to include of high school and college-level educators in this process was emphasized. Trainee-based efforts that were discussed included extension of mentorship to undergraduate students, facilitating mentorship of leadership skills through committee involvement, minority member representation on councils, promoting diplomacy and self-presentation skills, volunteering, and networking.<sup>1</sup> Trainees in attendance noted that increased availability of tools, such as

---

<sup>1</sup>This discussion included reference to efforts made in other fields, such as accounting, which might be relevant to the field of neuropsychology. Subsequent to the Summit additional information provided by an employee of a large accounting firm led to the identification of a national organization, the primary goal of which is to provide ethnic minority mentorship in many fields. Information related to this organization is available at <http://www.inroads.org/>

Finally, the group agreed that directing organizational change for a more diverse neuropsychology requires the development of a core set of values, which need to be disseminated through mentorship and practice guidelines, and used to guide organizational/institutional use of resources.

## REFERENCES

- Fletcher, R., Fletcher, S., & Wagner, E. (1996). *Clinical epidemiology: The essentials*. Baltimore, MD: Williams & Wilkins.
- Levkoff, S., & Sanchez, H. (2003). Lessons learned about minority recruitment and retention from the Centers on Minority Aging and Health Promotion. *Gerontologist*, 43(1), 18–26.
- Lucas, J. A., Ivnik, R., Willis, F., Ferman, T., Smith, G., Parfitt, F., et al. (2005). Mayo's Older African American Normative Studies: Normative data for commonly used clinical neuropsychological measures. *The Clinical Neuropsychologist*, 19, 162–183.
- Mungas, D. (2006). Neuropsychological assessment of Hispanic elders: Challenges and psychometric approaches. In G. Yeo & D. Gallagher-Thompson (Eds.), *Ethnicity and the dementias* (2nd ed.). Washington, DC: Routledge.
- O'Bryant, S., O'Jile, J., & McCaffrey, R. J. (2004). Reporting of demographic variables in neuropsychological research: Trends in the current literature. *The Clinical Neuropsychologist*, 18, 229–233.
- Sackett, D., Haynes, R., Guyatt, G., & Tugwell, P. (1991). The interpretation of diagnostic data. *Clinical epidemiology: A basic science for clinical medicine* (2nd ed.). Boston: Little, Brown & Company.