Guest Editorial

Controversies in Neuropsychology

We proudly introduce this special issue highlighting major controversies in the clinical practice of neuropsychology in neurorehabilitation. In order to accurately present as many controversies as possible, we necessarily deviate from the usual journal format by including more articles and allowing greater editorial license for the authors, who represent a group of talented critical thinkers who are making significant contributions in advancing the practice of this field.

Notably, the last decade has witnessed phenomenal growth in neuropsychology as a scientific and applied discipline. As a brain behavior relationship specialty, clinical neuropsychology is afforded a unique opportunity for integrating recent developments in the clinical neurosciences with behavioral and medical knowledge to provide useful rehabilitation applications. However, as a young and developing field, neuropsychology is experiencing unavoidable growing pains.

This "controversies" issue reflects our belief that open self-examination is a prerequisite to the growth and development of neuropsychology as a science. This perspective follows the trend set by the several authors who served to inspire this effort. Dr. Carl Dodrill, in "Myths of Neuropsycholology" [1] found that several widely held assumptions appeared to be myths under critical inspection and offered suggestions for remediation. Dr. Jerry Sweet, in "Forensic Neuropsychology: Fundamentals and Practice" [2] extended this perspective to a critical examination of the practice of neuropsychology as applied in the courts and defined a model for it's objective scientific practice that applies more generally. We followed this trend with a special issue of "Brain Injury Source" devoted to introducing controversies in neuropsychology [3] to an interdisciplinary and diverse audience interested in brain injury rehabilitation.

This special "controversies" issue extends from our previous effort to address some of the more controversial issues in the clinical practice of neuropsychology. The authors were selected based on their ability to critically address these issues. Although space requirements limit full explication of remediation for all of the controversies raised, basic recommendations and guidelines are offered. Space limitations further prevented our including a Letter to the Editor and Author's reply contiguous with each paper, but we include a few and will include the rest in a future issue.

Dr. Sbordone begins the issue by summarizing problems with the ability of tests designed to diagnose brain impairment to predict real-world functioning. He both defines and offers remedial guidelines for problems with ecological validity. Dr. Senior follows by providing impressive evidence from a very large database indicating that standard interpretive procedures of the MMPI are misconceived and misapplied. Alternately, he proposes a more rational hypothesis testing procedure.

Dr. Gouvier's editorial article highlights widespread prevailing ignorance and failure to use base rates in standard clinical practice that result in frequent diagnostic misclassifications. His article reminds clinicians that knowing about the importance of base rates requires a correction in order to advance the practice of neuropsychology accordingly. Next, Dr. Williams reviews American Psychological Association standards to demonstrate specific common psychometric violations in clinical practice. Measurement and norming problems with commonly used tests, standards regarding differential diagnoses, validity and reliability, need for manuals, standardized administration, screening, and research versions are discussed, along with prescriptive suggestions.

Drs Nicholson, Martelli and Zasler review the increasing body of evidence that pain and such associated problems as affective distress, sleep disturbance and medication use can interfere with cognitive performance and confound interpretation of neuropsychological test results. These findings seem particularly relevant in cases of posttraumatic headache. The note that further study is needed to answer the many questions raised by these findings. Dr. Green then reviews some of the reasons why clinicians and researchers arrive at discrepant results and differing conclusions by examining their theoretical and practical choices, including

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whether and how to use tests of motivation and effort, and what failure criteria to apply and how to interpret results. He strongly argues for employing effort testing to remove error as a source of invalidity from data in not only individual assessment, but also group research studies, in order to improve the conclusions reached. Drs Green and Iverson follow by examining the relationship between exaggeration and olfactory discrimination in a large sample of head injury related disability insurance applicants. They present compelling data showing that the strong observed association between brain injury severity and olfactory deficits was completely obscured in a subgroup of patients who failed one of the tests of cognitive "effort", and argue for effort testing in individual assessment in group studies of olfaction, in order to control for variance due to exaggeration and prevent overestimation of actual impairment.

Drs Vanderploeg and Curtiss examine the validity of existing symptom exaggeration and malingering assessment procedures by employing a large clinical sample to test diagnostic accuracy. Using analysis of clinical cases in their sample, they observe fairly high rates of misclassification of patients with real deficits as malingerers, demonstrating the inherent difficulties in interpreting poor performances on symptom validity measures as indicative of malingering. Dr. Colby then very specifically addresses validity of statistical test assumptions using a measure of exaggerated memory deficits (TOMM). Using computer generated data, he examines the efficacy of different cut scores based on statistical score distributions on accuracy of classification decisions. He recommends changes for improving decision rules and norms for this test and for neuropsychological tests generally.

Drs Fox and Lees-Haley proceed with an irreverently witty editorial about whether the practice of forensic neuropsychology can call itself scientific by poking holes at rampant problems in typical practice. They provide support for the perspective that this is an incipient discipline in great need of research and modesty with a very short list of uncontroversial "established facts". Underlining the theme of this issue, this editorial truly proposes critical self-examination and proposes suggestions for promoting the scientific practice of Forensic Neuropsychology.

Dr. Purisch next addresses criticisms and misconceptions of the Luria Nebraska Neuropsychological Battery that have deterred its use. He argues that its application of the Lurian theoretical model produces advantages beyond diagnostic discrimination to formulating rational treatments, counseling and guidance and analyzing components of behavioral functioning within the real world context. Drs Schatz and Chute and Ms. Hughes then evaluate factors determining which individuals received neuropsychological evaluations following brain injury from state wide records between 1985 and 1995. They found that, for this period, health care reform did not adversely affect neuropsychological evaluation provision, but that only a discrete sample of individuals received evaluations.

Dr. and Ms. Barisa's paper contrasts traditional uses of neuropsychological evaluation versus needs of vocational rehabilitation counselors. They subsequently identify ways for neuropsychological evaluations to (a) address the multiple and complex questions associated with vocational rehabilitation referrals and predictions in everyday work environments and to (b) convey this information in clear, concise and easily understood terms. Finally, Dr. Hammond, in the only treatment study in this issue, reviews the literature in this controversial area and reports on a case study of a patient with rapid onset chronic fatigue syndrome marked by significant cognitive impairment and excessive left frontal theta noted on Quantitative EEG. A novel treatment approach utilizing EEG neurofeedback and self-hypnosis training was employed with produced considerable improvement on standardized measures and collaborative interviews, with most changes maintained at 9 month follow-up testing.

Finally, we have included several Letters to the Editor regarding several of the articles, as well as a couple of Responses from the Authors. Because of space limitations, we will include additional Letters and Responses in a future issue. Our intention, again, is critical self-examination in the service of advancing neuropsychology as a science and a useful neurorehabilitation service. We do this without squeamishness about challenging the established professional guild, and in an international format, because we believe that elaborating controversies and mobilizing opinions can hopefully facilitate the goal of coalescing ideas to promote increased utility of neurorehabilitation services.

Michael F. Martelli, Ph.D.
Nathan D. Zasler, MD

References

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