

Neuropsychological Evaluation of the Spanish-Speaker:

A Reply to Artiola I Fortuny (1996)

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Running head: Spanish Reply

Recently Artiola I Fortuny (1996) published a review of our book, Neuropsychological Evaluation of the Spanish Speaker (Ardila, Rosselli, and Puente, 1994) in this journal. We appreciate the time and energy taken to produce such an exhaustive review of our little volume. However, considering the extremely negative and personal nature of the review, we felt obliged to the scientific and professional community to provide reasoned and timely information which should help clarify the numerous misunderstandings in the review.

Methodological and Normative Issues

This book represents research initiated over a decade ago and which is still active in the United States, South America, and Spain. The goal of one aspect of this program was to translate, adapt, standardize, and provide norms of neuropsychological instruments used in non-Spanish speaking countries (primarily the United States and Russia). While numerous norms are presented, the book was not (and this is indicated in the preface) intended to be exhaustive of all aspects of this research program, since the focus was on research completed in Columbia. Indeed, several studies reflecting this program have been presented (primarily at the Society for Latin American Neuropsychology, the National Academy of Neuropsychology, the American Psychological Association, the International Neuropsychological Society, and several conferences in Spain) and published providing more exhaustive detail of various aspects of this program (see for example, The Clinical Neuropsychologist, Journal of Clinical and Experimental

Neuropsychology, Brain and Cognition, Developmental Neuropsychology, Neuropsychologia, Papeles de el Colegio de Psicólogos- Spain, Archives of Clinical Neuropsychology, to name several journals).

Hence, it is important to note not only that the book was internally reviewed but that various aspects of this research program have been scrutinized not only by editors and reviewers of a variety of quality neuropsychological journals, but by reviewers of several national and international neuropsychological conferences as well. Thus, the methodological aspects of this research program not only have previously found their way into the scientific and professional arena but numerous colleagues from a wide variety of outlets and countries have previously scrutinized the validity of such procedures and the eventual results.

One could make the argument that since the normative study was carried out in Colombia that the book and tests should only be used in Colombia. An argument might then be made that no Hispanic should be tested outside Colombia since few, if any, norms exist for them. Thus, one could argue that all testing of Hispanics outside of Colombia, including the United States, should cease immediately because it violates a rigorous interpretation of the ethical standards not only of the American Psychological Association but of common scientific and professional standards.

However, such a radical approach seems intuitively inappropriate. Further, such an approach actually is not the standard for the growing field of clinical neuropsychology. For example, Spreen and Strauss's (1991) published several norms which were presumably based on testing of Canadians (and, in some cases, Australians). Further, the norms for the Token test come from Italy, the Rivermead from England, etc. While it makes sense to be careful in committing Type I errors, one must equally be concerned with Type II errors. Might it not be better to use norms from Colombia, for example, than North American, Anglo-Saxon norms (especially with tests specifically geared to Hispanic populations)?

Another issue which is not addressed in the review and similarly ignored in clinical practice is that of copyright violation. Most "Hispanic" neuropsychological tests have been translated locally (and not checked by linguists) and copied without permission of the authors or test publishers. This represents not only ethical but legal violations. Thus, one could make the argument that outside a few tests (e.g., Peabody) which are translated into Spanish by the publisher, well over 95% of the current tests used by neuropsychologists with Spanish-speaking clients have been illegally developed. We took care to avoid this particular problem. This is why complications initially arose when readers of our book called The Psychological Corporation to obtain a copy of the Wechsler Memory Scale (this was eventually resolved).

Several comments are found in the review suggesting that the groups were not well described, chosen, etc. Interestingly, in reviewing the Lezak (1995), Reitan and Wolfson (1995) and Spreen and Strauss (1991) books, which come as close in comparing the Ardila et al. book to mainstream clinical neuropsychology as imaginable, this information is also not found. Again, one might make the argument that the lack of information makes the tests found in this book of little value. In contrast, there is ample evidence to suggest that the most common tests used in neuropsychology do not have specific neuropsychological norms published (especially by the publisher). Unfortunately, the Ardila et al. volume is being compared to standards not currently being followed.

Nevertheless, most of the information in question (e.g., subject selection) can be found in individual papers, if the reader is so inclined as to complete a more exhaustive literature review in articles such as Ardila and Rosselli (1989a & b), Ardila, Rosselli, and Ostrosky (1992), Rosselli, Ardila and Rosas (1990) and Rosselli and Ardila (1991). Of course, an alternative to examining these articles is simply to group our book with other commonly referenced and used texts and tests, and simply discard most existing neuropsychological knowledge.

We appreciate the comments regarding sample fluctuations and limited number of patients in some cells. It is important to realize that funding for this program has been minimal and that we felt it

was best to provide some reasonable amount of information now rather than to wait many more years before all cells and equal number of subjects per tests could be achieved. However, we again suggest the reader review the most influential books on neuropsychological assessment as they will find that much less information is contained in most of these books. To illustrate some of these points, Table 1 is presented as a means of comparing our book with the extremely well regarded (and justifiably so) book by Spreen and Strauss (1991).

Insert Table 1 about here

#### Tests and Test Selection

Questions were raised regarding lack of pilot studies, item content and test selection criteria. Again, we refer the reader to the authors' previously published articles for additional information that should help address the questions that would typically be answered by pilot studies.

The question of test selection is more complicated. It is important to emphasize that we never suggested that this book would or should represent a battery of tests (e.g., the Halstead-Reitan Neuropsychological Battery). Thus, questions of redundancy do not seem to apply. Further, these tests have been used with regularity in both the United States and Russia where the authors were trained. They were chosen not only due to the authors' familiarity with them

but because of their common use in the countries where the authors trained and their internationally accepted scientific and clinical foundations. Some of the tests closely resemble Luria's tests while others are more reflective of those used in American clinical neuropsychology. As to why the Wechsler Memory Scale was used and not the current revision, the answer is simple; the research program was initiated prior to the publication of the revision. Incidentally, Spreen and Strauss (1991) also provide norms for the original WMS.

As to the selection of the Argentinean adaptation of the Boston Diagnostic Aphasia Examination, we believe that there was little, if any need, to change or adapt the test to Colombian populations. If every test was to be adapted to a specific population, then one could argue that there would have to be a minimum of about 20 versions of any test to represent the predominantly Spanish-speaking countries throughout the world. Further, one could then argue that within the United States alone a variety of tests would have to be developed to address each ethnic group, possibly stratified further according to geographical region, acculturation, etc. The question of standardization would become impossible and obsolete.

#### Educational Variables

We agree that educational variables play a significant role in neuropsychological function and assessment. Indeed, the data support the hypothesis that education appears as prophylactic for

brain dysfunction. This view is not completely endorsed by others. For example, Reitan and Wolfson (1995) have recently suggested that education is not as a critical variable as often believed when compared to brain dysfunction. Regardless, most neuropsychologists do little more than simply be aware of its importance. Using the standard in neuropsychological assessment reference, Lezak's Neuropsychological Assessment (1995), less than one page is devoted to educational variables.

#### Reliability and Validity

Several issues regarding reliability and validity were raised in this review. While we readily acknowledge that no reliability studies are found in this book, no mention of reliability is made in the Lezak (1995), Reitan and Wolfson (1995), and Spreen and Strauss (1991) books. Further, most tests commonly used in neuropsychology today do not have reliability measures included and when reliability data is included data is usually obtained with non-brain-damaged and non-clinical volunteers.

The question of validity for any neuropsychological test is a complex one. Whereas face, construct, and content validity are of importance, we believe that predictive validity is of greatest significance in neuropsychology. In contemporary neuropsychological theory, predictive validity refers to the capability of a particular test to predict brain pathology (Boll, 1981). In this regard, the careful selection of our patients with the norms presented would counter arguments that this validity has not been attended to adequately.



Further, we do not believe that the "gold-standard" for any type of validity is that of English speaking neurological populations. The best predictive validity in the present case would be brain-damaged, Spanish-speaking patients.

#### Spanish Language

Numerous comments were made regarding our use of the Spanish language. Indeed thinly veiled comments were suggestive that the Spanish used in the book was inappropriate, even incorrect (e.g., the use of the letters f, a, and s). These letters were used for equivalence purposes. While realizing that they may pose greater problems for the Spanish speakers, this was not a test of orthographic knowledge as implied by the reviewer. It was a test of verbal fluency and whatever difficulties would be found on this test and with these letters would be presented in the norms (i.e., all subjects would have equally difficult time). However, if further information is required regarding the theoretical analyses of these issues, the reader is referred to Rosselli, Ardila, and Rosas (1990) and related literature for more comprehensive analysis of the use of phonemic and semantic cues used by illiterates.

Unfortunately, the book has a larger than average percentage of typos. It is important to realize that the book was typeset by American, English-speakers but that the responsibility for these mistakes rests solely with the authors. However, this is a bilingual book and the first one of its kind. We believe that these errors will

detected by the discerning readers of the book but the authors would be happy to provide updated and "cleaner" versions any of the tests.

There are about 500 million Spanish speakers in the world and numerous versions of the language, whether in Spain or Latin America. The following are some examples of the difficulties the reviewer had with specific comments or interpretations that may help resolve such complications;

1. Le aparecian unas enormes alas en su espalda. The entire Spanish language section of this book was reviewed independently by a Mexican language editor. One possible explanation of the difficulties raised by the reviewer is that she was more familiar with the Spanish used in Tucson or Barcelona than the Spanish typically found in Latin America.

2. Podria instead o podia. Both versions are acceptable and in this particular context although their meaning is slightly varied.

3. Que era mejor intentar que dejarse llevar por la corriente y ahorgarse inevitablemente. The verb is implicit and acceptable by Spanish linguists.

4. Quien me envio la secretaria. There is an a missing and the authors appreciate bringing this oversight to their attention .

5. Ayer fuiste a cine. The article may or may not be used. In Latin American countries, the articles are often implied. Further Ayer fuiste a cine is actually quite different than the proposed Ayer fuiste al cine.

6. Comments such as "Accents... are utilized in seemingly random fashion" and the "English narrative is awkward and does not flow easily" are not only vague, but biased and mean-spirited. Some of colleagues have written to provide specific and constructive criticism regarding words, phrases, and sentences. Their attention and assistance is appreciated and reflective of standard scientific practice. Again, most of the mistakes were typographical errors. Nevertheless, the authors stand corrected when specific information to the alternative, with rationale, is presented. Further, assuming that the reviewer is not aware of internationally accepted social standards, all forms of criticisms are always best received when delivered in more diplomatic fashion.

7. The issue of inverted question marks is an interesting modern issue for Latin America. With the introduction of computers, there is increasing tendency to ignore this traditional element of the Spanish punctuation system.

8. Adjectives and nouns are often capitalized in the middle of sentences.

9. Presumably the reviewer missed the intent with some of the items by reading, much like a patient might, some the items literally. For example Dese un beso en la nariz is similar to the instruction in the Halstead-Reitan that instructs the patient to place their left hand on their left elbow.

10. It is difficult to respond to the issue of errors on the Grammar Test. The test was constructed with the assistance of

linguists from both Latin America and Spain. More specific comments would have been helpful.

11. tla is an acceptable combination of the word atlas in Spanish.

12. Asrilo presents an interesting linguistic issue in that it combines the letters S and R. Previously this word had been used in other studies to address the question of metalinguistic knowledge by asking the patient which word of a particular list was not "real but could exist in the Spanish language".

13. Realice instead of ejecute also poses an curious problem. Both words are closely related and in the instructions both can be used Realice is more often used in Latin American and ejecute sometime has a secondary meaning of "killing".

14. All instructions were written in the formal address except for the word Mostrale which is incorrectly written.

15. The reviewer points to the confusion between phoneme and syllable in the Repetition Test for Spanish Speakers. If the phonological repertoire of the patient with language production problems is evaluated, the patient must be asked to repeat different language phonemes. Some consonantic phonemes cannot be produced in isolation and, thus , an additional vowel has to be introduced (e.g., the phoneme /p/ cannot be produced in isolation. To test this the ability to produce this phoneme, a vowel has to be introduced such as /pa/).

## Concluding Comments

The aforementioned reply attempts to clarify the serious misunderstandings of our book by Artiola I Fortuny. As mentioned in the book's preface, we thank the many colleagues (and patients) who have assisted us in furthering "Hispanic neuropsychology". We also looked forward to comments and criticisms from our colleagues to help expand such an important knowledge base. Unfortunately, the review by Artiola I Fortuny does little in this regard; indeed, the opposite is true. This review was completed by a person who is not a member of the Hispanic Neuropsychological Society nor of the Latin American Society of Neuropsychology, has never published in the field (based on three independent literature reviews, no article was found in Psychological Abstracts from 1974- the date the CD version of the abstracts begin- to the present nor in other online sources including but not limited to the World Wide Web), and, to the best of our knowledge, never presented at any of the neuropsychological meetings we have ever attended. Further, the review was also not externally reviewed.

With the decade of the brain coming to an end, the paucity of widely accepted theories of neuropsychology, the shrinking scientific base of our discipline (yet expansion of clinical activities), the changing demographics of the United States (i.e., increasing number of Hispanics), and finally the current economic revolution in health care, reviews such as this are disappointing and reflective of the numerous problems which have traditionally plagued our field

(Puente, 1992). The extremely personalized and biased review by Artiola I Fortuny undeniably represents the worst our field has to offer.

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Table 1. Comparison of the characteristics of some norms in the Ardila et al. (1994) and the Spreen and Strauss (1991) books. (Only those tests found in both books are included).

Test	Ardila et al. (1994)	Spreen & Strauss (1991)
<b>Information</b>		
<b>Naming Test</b>		
Sample size	346	136, 241
Education	0-12	Not specified
Age Range	56-75	6-12, 50-85
T scores	Yes	No
Percentiles	Yes	No
<b>Token Test</b>		
Sample Size	180	Not specified
Education	0-12	Not specified
Age Range	16-55	6-"adults"
T scores	No	No
Percentiles	No	Yes
<b>Verbal Fluency</b>		
Sample Size	546	225, 345
Education	0-12	<12 vs >12
Age Range	56-75	15-75
T scores	Yes	No
Percentiles	Yes	No

November 14, 1996

Dr. Kenneth Adams  
Editor, The Clinical Neuropsychologist  
Psychology Service (116B)  
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Ann Arbor, Michigan

Dear Ken:

It was a pleasure to have seen you at APA and NAN. Based on our discussions at these meetings, please find enclosed our response to Artiola.

Based on our telephone discussion in July, Alfredo, Monica, and I are enclosing a "comment" on the Artiola review. We would have no problems having the review externally reviewed. However, we are under the impression, based on our telephone conversation, that her comments were not externally reviewed. Of primary importance is the issue of time. We believe that a timely response from us in TCN is extremely critical. Also, we would prefer that if Artiola was to reply to our commentary, that her reply would (again for the sake of time) come out in a later issue. If Artiola does reply, for the sake of fairness, we would request the opportunity for another commentary (maybe even in the same issue; we promise a very quick turn-around time).

Thank you for your assistance.

Sincerely,

Antonio E. Puente