

Critical methodological considerations in (bi)language research

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The presentation addresses methodological issues (concerns) as well as other important issues related to the “logic of scientific discovery” and its prerequisites. Specifically, the goal of the present paper is to critically discuss methodological issues that I think (we) psycholinguists tend to minimize as we theorize about language processing issues. Among some of the issues considered in this presentation are:

1. The psycholinguist’s intrinsic desire to arrive to large scale conclusions about bilingual cognitive structures, or processes without considering, or actually forgetting, the old truth that *it is not what we get, but how we get it*. The suggestion, of course, is that the outcome or the results of an experiment (i.e. the WHAT) are highly dependent on the methods used (i.e., the HOW). Regardless of how *earth-shattering* a research finding might be, it should pass the HOW test.
2. *Think Small and Act Big*: This concern stems primarily from the general view that highly technological research paradigms (e.g., fMRI, eye-tracking, ERPs) are better than traditional behavioral techniques (e.g. visual moving-window, or the auditory moving-window). As a consequence, a simple research question that can be easily answered using the auditory or visual moving-window technique is now being answered using an eye-tracking technique; Are we asking the right research questions?
3. *The Cognitive Identity Crisis*: Cognitive scientist are omniscient. Depending on the situation, a cognitive scientist can easily become a cognitive-neuroscientist, a cognitive-developmental psychologist, and a cognitive-aging expert. This of course begs the question as to what constitutes *expertise* and whether a cognitive/experimental psychologist should do what he/she was trained to do? In other words, we should give *Caesar what belongs to Caesar* (Mt. 22:21)?
4. *Replication and the Acceptability of Type I error*: Let’s give science a second chance by performing and accepting experimental replications and not accepting one research finding as the absolute truth (see 1 above). Moreover, as researchers we should understand that a low probability value (*p-value*) is not always better or that a research finding is stronger when we obtain a lower probability value. However, it would be quite unacceptable for a bilingual researcher attempting to replicate a monolingual finding without a sound bilingual theory.
5. *Who Owns Theoretical Models?* Are theoretical models (e.g., *Semantic Spreading Activation and Bilingual Hierarchical Models*) owned by their creators/developers (i.e., Collins & Loftus, 1975; Kroll & Stewart, 1994, respectively)? Isn’t science a collaborative effort for ALL scientists to generate new theories, and refine those theories with the help of other Scientists?

Although highly general, and somewhat critical, it is hoped the issues raised in this presentation generate a *methodological awareness* for psycholinguists and language researchers as we try to understand the cognitive intricacies of the bilingual linguistic (cognitive) system.