



## **The Impact of Working Memory on the Recovery from Aphasia**

Review of PhD Thesis

Candidate: Annamária Kiss

The dissertation addresses an important and underexplored area: the role of executive functions, particularly working memory, in the recovery process from aphasia, with a special focus on bilingual patients. The work has several potentials, given the increasing interest in how cognitive factors shape language recovery and the unique challenges presented by bilingual aphasia. Thus, the topic is not only important for research but also has practical relevance for those working in the field of language rehabilitation.

The dissertation's primary strength lies in its integrative approach: it investigates both linguistic and non-linguistic cognitive domains, bridging a gap often overlooked in traditional aphasia research. The methodological design is robust, employing a wide range of standardized neuropsychological and linguistic assessments (including the Boston Naming Test, verbal fluency tasks, TROG-H, Token Test, Trail Making Test, and the Rey–Osterrieth Complex Figure, among others). This comprehensive battery allows for an in-depth exploration of executive function profiles in aphasia.

The inclusion of both monolingual and bilingual participants and careful matching with reference groups further strengthen the generalizability and relevance of the findings. Importantly, the dissertation moves beyond group-level contrasts to highlight within-group variability. The analytical section is thorough, demonstrating the candidate's strong command of quantitative and interpretive methods and offering multiple perspectives on the data.

While the dissertation is well-structured and the research question highly relevant, a few interpretive aspects could be refined. The distribution of aphasia severity (severe–moderate–mild) differs substantially between monolingual and bilingual participants. It would strengthen the discussion to explicitly address how this imbalance may have influenced the outcomes or interpretations.

In addition, the bilingual group is linguistically heterogeneous, with some participants' L1 being Hungarian and others Croatian. Since some of the linguistic assessments (e.g., Token Test, TROG, and letter fluency) were administered only in Hungarian, the potential confounding effect of L1 dominance and assessment language should be acknowledged more explicitly. This could help clarify whether certain group differences, or lack thereof, reflect true cognitive differences or linguistic bias.

The discussion section effectively summarizes the main results, yet it could engage more deeply with broader theoretical models. Specifically, the author introduces several conceptual frameworks in the introduction, such as domain-general vs. domain-specific impairments, propositional vs. concrete-abstract models, and uni- vs. multidimensional perspectives, but these are not fully revisited in the interpretation of results. Expanding this



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section to discuss how the findings align with or challenge these models would enhance the theoretical contribution of the dissertation.

Despite these minor issues, the dissertation is a well-conceived, methodologically sound, and conceptually rich piece of research. It demonstrates the candidate's ability to independently design and conduct complex studies, analyze data critically, and interpret findings. The work offers a meaningful contribution to our understanding of how executive functions interact with language recovery, particularly in bilingual aphasia, and it holds both theoretical and applied value.

**I therefore recommend that the dissertation be accepted and that Annamária Kiss be awarded the degree of Doctor of Philosophy (PhD).**

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