

## **Exploring individual differences in language learning abilities: from linguistic morphology to brain morphology**

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The collaborative DOC-team project *Exploring individual differences in language learning abilities: from linguistic morphology to brain morphology* is an interdisciplinary investigation that is concerned with individual differences in productive and perceptive language processing, from a linguistic and neuroanatomical perspective, in order to better understand first and second language acquisition processes, taking into account working memory, musicality and language aptitude. Our project aims at developing new methods to test language proficiencies across ages, and to locate brain regions for high and low language abilities.

Therefore, we developed an adaptation of proven methods for studying and analyzing systematically for the first time the acquisition of derivational morphology in a longitudinal investigation of spontaneous mother-child interaction as well as new tests that focus on language and musical abilities and a questionnaire. Furthermore, a language perception test in four different languages, a language imitation test in seven languages, an elicitation test for derivation, a test for primacy and recency effects in unintelligible strings of utterances, and a Mandarin perception test that focuses on tone discrimination on the suprasegmental and segmental level have been developed. Most of the tests have already been programmed and will be validated at latest in May. They are implemented by us and our collaborators at the Department of Neurology, Section of Biomagnetism, at Heidelberg Medical School.

Our project led to many successful international publications, which clearly shows the high relevance and importance of our work. The publications and scientific output of this project will go beyond the period funded.

We continue our project with the aim at making the newly developed tests visible in the scientific community, although Sabrina Turker finished her thesis earlier than expected, because of her personal career planning, and left our team. Comparisons to already existing language aptitude tests have shown that our newly developed tests can easily be added to already existing test batteries or offer an excellent alternative.