Poszter

Our research aimed to investigate whether the relationship between statistical learning mechanisms and specific language processing mechanisms is mediated by other cognitive abilities, such as cognitive control, working memory, and short-term memory.

Our findings indicate that when assessing offline, non-predictive language mechanisms, we did not observe any mediating effects. In other words, statistical learning mechanisms provide a better explanation for the shared variance in language abilities compared to simpler executive functions. However, this does not imply a lack of connection between cognitive and language abilities. Instead, statistical learning mechanisms capture the commonality expressed by cognitive abilities, and there is certainly more variance that can only be accounted for by statistical learning tasks.

In addition, the second figure illustrates that when examining predictive language mechanisms, specifically violation processing in sentences and predictive processing in sentences, we observe an inverse effect. This suggests that cognitive abilities fully mediate the relationship, reducing the significance of the effects of statistical learning variables. In other words, predictive language mechanisms are better explained by nonlinguistic cognitive abilities rather than statistical learning mechanisms, unlike the case of offline language mechanisms where that relationship remains intact.

Furthermore, when comparing the different statistical learning variables, offline measures demonstrated greater explanatory power for this effect than online reaction time-based variables.