Word Frequency Is a Cue to Word Order for Adults: Validating an Online Method with Speakers of Italian and Turkish for More Inclusive Psycholinguistic Testing

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One of the fundamental aspects of language acquisition is learning the relative order of function and content words. While content words carry lexical meaning, functors define grammatical structure. Since functors are more frequent and phonologically more reduced than content words (de la Cruz-Pavía et al., 2021), infants can rely on these cues to distinguish them and use functors as anchors to the grammar of their native language (de la Cruz-Pavía et al., 2021). The relative order of functors and content words varies across languages, e.g., Italian is functorinitial, while Turkish is functor-final. Infants are sensitive to this basic order by eight months (de la Cruz-Pavía et al., 2021), and so are adults (Gervain et al., 2013). The current study tests the anchoring effect of functors in typologically different languages, Italian and Turkish, on adults. First, we test whether previous lab-based results with Italian adults (Gervain et al., 2013) are replicable using online testing. Second, we leverage online testing to assess understudied languages such as Turkish. As in Gervain et al. (2013), after listening to a 17-minute familiarization with an artificial language, in which frequent words mimicking functors and infrequent words mimicking content words alternated, participants chose between test items with a functor-initial (Italian-like) and a functor-final (Turkish-like) order. So far, we have tested 23 Turkish and 25 Italian adults. Results indicate that Turkish participants have functorfinal preference, as predicted, while Italian speakers showed no preference. Pooling the results with Gervain et al.'s (2013) study, we found a significant difference between Italian and Turkish speakers' preferences and no difference between the in-lab and online Italian groups. The findings suggest that functors provide cues for learning new linguistic material, and adults show sensitivity to the frequency of distribution of functors.

References:

- De La Cruz-Pavía, I., Marino, C., & Gervain, J. (2021). Learning word order: early beginnings. Trends in Cognitive Sciences, 25(9), 802–812. https://doi.org/10.1016/j.tics.2021.04.011
- 2. Gervain, J., Sebastián-Gallés, N., Díaz, B., Laka, I., Mazuka, R., Yamane, N., Nespor, M., & Mehler, J. (2013). Word frequency cues word order in adults: cross-linguistic evidence. Frontiers in Psychology, 4. https://doi.org/10.3389/fpsyg.2013.00689