

Talk 1. Language disorders through the lens of biolinguistics

Abstract. Clinical linguistics struggles to establish exact typologies of developmental language disorders (e.g. dyslexia, childhood apraxia of speech, developmental language disorder), as well as sharp language profiles of broader cognitive conditions impacting on language (e.g. autism spectrum disorder, schizophrenia) or conditions presenting with language impairment that result from specific damage in the biological infrastructure of language (e.g. basal ganglia diseases, Williams Syndrome, *FOXP2* mutations). On paper, each of these conditions is expected to present with a distinctive, condition-specific set of abnormal features at different language levels (from phonology to morphology to syntax, but also with regards to how language is put into use), but also at their biological underpinnings (from genes to brain areas to cognitive and behavioural abilities). Nonetheless, patients can be seldom ascribed unambiguously to such putative categories or language profiles. The difficulties for linking biological damage (at the bottom) to language deficits (at the surface) hinder a precise diagnosis and an efficient treatment of patients. In this talk, it will be argued that biolinguistics can help clinical linguistics significantly to circumvent these caveats and limitations, since its main objective is providing robust bridging theories between biology and language. More specifically, it will be argued for putting the focus on intermediate-level layers and components of language, particularly, brain oscillations. This claim will be illustrated by the construal of language deficits in ASD and in people with mutations in *GRIN2A* from this oscillopathic perspective. The talk will conclude with some potential ways of improving this new approach to language disorders and with some avenues for future research in this area.

Selected references:

Benítez-Burraco, A. (2016). A biolinguistic approach to language disorders: towards a paradigm shift in clinical linguistics. In *Advances in Biolinguistics* (pp. 256-271). Routledge.

Murphy, E., & Benítez-Burraco, A. (2017). Language deficits in schizophrenia and autism as related oscillatory connectopathies: An evolutionary account. *Neuroscience and biobehavioral reviews*, 83, 742–764. <https://doi.org/10.1016/j.neubiorev.2016.07.029>

Jiménez-Bravo, M., Marrero, V., & Benítez-Burraco, A. (2017). An oscillopathic approach to developmental dyslexia: From genes to speech processing. *Behavioural brain research*, 329, 84–95. <https://doi.org/10.1016/j.bbr.2017.03.048>

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Murphy, E., Hoshi, K., & Benítez-Burraco, A. (2022). Subcortical syntax: Reconsidering the neural dynamics of language. *Journal of Neurolinguistics*, 62, 101062. <https://www.sciencedirect.com/science/article/pii/S0911604422000069>

Benítez-Burraco, A., Hoshi, K., & Murphy, E. (2023). Language deficits in *GRIN2A* mutations and Landau–Kleffner syndrome as neural dysrhythmias. *Journal of Neurolinguistics*, 67, 101139.

Talk 2. Human self-domestication and the evolution of modern language(s)

Abstract. This talk is aimed to re-examine the problem of the evolution of language (and the emergence of present-day languages) from the perspective of a new account of how humans might have evolved, namely, the self-domestication hypothesis of human evolution. In brief, this hypothesis argues that our species went through an evolutionary process that parallels the changes experienced by domesticated mammals. Interestingly, this process can account for many of the cognitive and behavioural distinctive features of the human species with an impact on language acquisition and use. Specifically, it might have decisively contributed to the potentiation of the cultural niche that enables the complexification of languages via a cultural mechanism. Diverse types of evidence (from paleogenetic to clinical) will be presented to support this claim. Two main outcomes of this evolutionary process will be examined: the complexification of grammar and the complexification of prosody. Nonetheless, as it will be also discussed in the talk, increased self-domestication is expected to have contributed to improve language use (pragmatics) too, and ultimately, other human-distinctive, language-related behaviours, like music. Overall, it will be defended an evolutionary model for language that sees language evolution as a gradual process complexly interwoven with the gradual evolution of human modern biology, behaviour, and culture, and for which cultural niche construction, facilitated by human self-domestication, might have been a main driving force.

Selected references:

Progovac, L., & Benítez-Burraco, A. (2019). From Physical Aggression to Verbal Behavior: Language Evolution and Self-Domestication Feedback Loop. *Frontiers in psychology*, 10, 2807. <https://doi.org/10.3389/fpsyg.2019.02807>

Benítez-Burraco, A., & Progovac, L. (2020). A four-stage model for language evolution under the effects of human self-domestication. *Language & Communication*, 73, 1-17.

Benítez-Burraco A. (2021). Mental time travel, language evolution, and human self-domestication. *Cognitive processing*, 22(2), 363–367. <https://doi.org/10.1007/s10339-020-01005-2>

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