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Deconstructing swearing in the brain: a multifeature analysis of naturalistic speech processing

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Abstract

Swear words have unique properties and their use can elicit strong early and late neurophysiologic responses when presented in isolation. But swearing is ubiquitous in everyday conversation and often non-offensive; a phenomenon which remains understudied. In this study, 26 Brazilian Portuguese speakers listened to naturalistic podcast conversations containing swear words as stimuli while undergoing magnetoencephalography (MEG) recording. Currently, the collected data are being analyzed using an encoding model to measure the weight of acoustic (spectrogram, speech envelope, acoustic edges), linguistic (words, sentences, grammatical relations), distributional (word surprisal and entropy), and semantic-emotional (concreteness, offensiveness, valence, arousal, tabooeness) features during comprehension. This is the first MEG study in BP, a language that is underrepresented in neurolinguistic studies, contributing to the current body of literature on the processing of swear words by use of naturalistic speech as stimuli and validation of a comprehensive analysis of emotional and semantic features.