The Role of Individual Differences in Spanish Prosodic Variation

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Prosody plays a central role in spoken language by structuring speech, guiding interpretation, and conveying pragmatic and affective meaning. While Spanish prosody has been well described at a general level, considerably less is known about how native speakers differ in their prosodic production and which factors underlie this variability. The present study investigated how individual differences regarding musical sophistication, emotional intelligence, working memory, and neurodevelopmental disorders (ADHD & ASD) relate to variation in prosody production by native Spanish speakers across different sentence types. To investigate this, multiple aspects of prosody production obtained from speech from a read-aloud task were analysed: (1) temporal variation, analysed through speech and articulation rates, and (2) intonational variation, analysed phonetically through pitch contours and phonologically through pitch annotation. The results showed that different aspects of prosodic variation were partly related to individual differences. Emotional intelligence was related to variations in speech rate, and working memory was related to pitch contour variations in specific sentence types. In contrast, neurological groups showed only limited differences in overall pitch annotation distributions. These results show that prosodic variation between speakers can partly be explained by individual differences between speakers. By moving beyond general descriptions of Spanish prosody, this study contributed to a more fine-grained understanding of how prosody production varies across individuals in Spanish. It links acoustic variability in native speech to multiple individual differences and provides a framework for modelling native-speaker variation in ways that can inform, for example, prosodic assessment tools.