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Measuring Abstract Mindsets through Syntax: Improvements in Automating the Linguistic Category Model

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Abstract: The Linguistic Category Model (LCM) was developed as a manual coding scheme for quantifying abstract mindsets in human language. Previous attempts to computationally automate the LCM have relied primarily on pre-coded semantic features, which fail to incorporate important contextual information integral to the LCM coding scheme. In this paper, we introduce Syntax-LCM, a novel method for automating LCM coding using syntax and dependency tree features as predictors of construal level. We compare the accuracy of Syntax-LCM to that of two previously used automated methods: LIWC LCM and Brysbaert concreteness ratings. We find support that the Syntax-LCM approximates the hand-coded LCM with higher accuracy compared to both the Brysbaert and the LIWC LCM. We also provide evidence that the syntactic features accounted for by Syntax-LCM mirror the inclusion criteria in the original coding manual and support theoretical relationships between distance and abstract thinking.