

# **Linguistic Simplification in Human-Computer Interaction: Implications for the Cognitive Foundations of Language**

**Anastasia Smirnova**

San Francisco State University, San Francisco, California, United States

**Skyler Ilenstine**

San Francisco State University, San Francisco, California, United States

**Lauren Baker**

San Francisco State University, San Francisco, California, United States

## **Abstract**

How can a range of syntactic variation within a language be explained, particularly when linguistic expressions produced by native speakers in one context clearly violate syntactic norms? To answer this question, we investigate the properties of information requests that arise in the context of human-computer interaction, such as 'most home runs player 1975 age'. The results of a production study that compares the structural complexity of information requests in human-computer vs. human-human condition show that participants in the former condition tend to use simpler syntactic structures and fewer relative clauses, compared to that in the human-human condition, despite syntactic priming. Our results suggest that speakers in the human-computer context utilize a qualitatively different type of formal grammar, linear grammar (Jackendoff & Wittenberg, 2017) as opposed to hierarchical grammar. The study contributes to the theoretical discussion on what constitutes a lower bound on complexity in language (cf. Futrell et al., 2016).