

## L2 Syntactic Complexity Analyzer: Applications in L2 Writing Research and NLP

Xiaofei Lu  
Department of Applied Linguistics  
Pennsylvania State University

### Abstract

Syntactic complexity refers to the range of syntactic structures that are produced and the degree of sophistication of such structures. A large number of measures have been proposed for characterizing the syntactic complexity of first and second language samples. In this talk, I first present the design of the L2 Syntactic Complexity Analyzer (L2SCA), a computational system I developed for automating 14 syntactic complexity measures widely used in L2 writing research. I then discuss how the system has been used in my own research to examine issues related to L2 writing syntactic complexity. Finally, I illustrate how the system has been employed by other researchers for such wide-ranging purposes as automatic essay or speech rating, detection of deception in speech, identification of gender differences in writing style, analysis of natural language in business process models, and assessment of readability and comprehensibility of English texts in diverse domains.

### Short Bio

Xiaofei Lu is Associate Professor of Applied Linguistics at Penn State University. His research interests are in corpus linguistics and second language acquisition. He is the author of *Computational Methods for Corpus Annotation and Analysis* (2014, Springer).