Instructed second language acquisition and longitudinal learner corpus research: The case of lexical and syntactic complexity

Our study explores the development of syntactic and lexical complexity in a written longitudinal learner corpus that comprises data collected from US university students. We address existing research gaps by focusing on 12 *ab initio* learners of a Second Language (L2) other than English (German) and utilizing dense data collection waves (17 over 4 semesters of study). The data comes from the freely and publicly available learner corpus (https://www.xxx) that has been annotated on multiple linguistic layers, which allows us to employ learner corpus research methods that have been rarely used in instructed L2 acquisition research.

We define complexity as "[t]he extent to which the language produced in performing a task is elaborate and varied" (Ellis, 2003, p. 340). Previous research has shown that generally, L2 complexity increases with growing proficiency but it also does not grow linearly but is subject to periodic waxing and waning as the result of the interaction among different aspects of complexity as well as different contextual variables (Bulté & Housen, 2014; Mazgutova & Kormos, 2015; Spoelman & Verspoor, 2010; Verspoor et al., 2008).

Our study contributes to this research by focusing on fine-grained complexity measures in beginner learner language. We use multilevel modeling methods that are considered imminently appropriate for longitudinal studies but are only beginning to gain traction in L2 research (Cunnings, 2012; Gries & Deshors, 2015). We operationally define syntactic complexity as the system of syntactic modifiers, or optional elements extending the basic sentence frame (Graesser et al., 2004). Using parts-of-speech as proxies for syntactic modifiers (e.g., attributive adjectives as prenominal modifiers), we (Authors, 2015) recently showed that learners modified their writing from the very onset of language study but the composition of the modification system changed continuously and was characterized by a decrease in cognitively and grammatically easier (uninflected and lexical) categories and an increase in cognitively and grammatically more difficult (inflected and clausal) categories. In this paper, we relate previously found syntactic growth trends to the development of lexical complexity, operationally defined as lexical variety (Mazgutova & Kormos, 2015). The results demonstrate different relationships between syntactic and lexical complexity measures in our data. For example, frequencies of attributive adjectives increase over time as a group trend and in the writing of all individuals, and this goes hand-in-hand with the growth in frequencies of new adjectives. In contrast, the use of predicative adjectives as a syntactic category declines over time but the frequency of new types used by the students in this category grows. Finally, for some modifiers that do not show any discernable increase or decline (e.g., prepositional phrases), a lexical growth is still found.

Our study thus contributes to developmental profiling of L2 writing and pinpoints complexity measures appropriate for the study of L2 production of beginners. Our results are consistent with the dynamic usage-based L2 acquisition approaches (e.g., Verspoor et al., 2012) showing complex dynamic relationships between different variables as well as high inter- and intra-individual variability along with uniform group trends. We conclude with teaching implications of our research.

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