

Trade-off or Connected Growers: Implications on Accuracy and Complexity in L2 Writing

Jordan Gonzalez

Teachers College, Columbia University

This paper responds to *Exploring the dynamism between propositional complexity and error rate: a case study* by Jordan Van Horn (this issue). In her study, Jordan Van Horn analyzes asynchronous email exchanges between a native and nonnative speaker of English utilizing three methods of analysis: error analysis, complexity analysis, and qualitative analysis. In triangulating the data, the author states that this mixed-methods approach can offer a better solution to limitations that arise as a result of employing only one method to analyze performance data. Indeed, interlanguage data often exhibits patterns of variability in complexity and accuracy in L2 learners (Spoelman & Verspoor, 2010). In order to better account for this variability and enhance our understanding of second language acquisition (SLA), the author incorporated Complex Dynamic Systems Theory (CDST) to guide her analysis. CDST facilitates the unification of the three methods of analysis since it posits L2 language as exhibiting the characteristics of complex systems and L2 language development as one that involves natural flux and variation (Verspoor, Lowie & van Dijk, 2008). A major contribution of this study was Van Horn's finding of connected growers between complexity and accuracy. The CDST construct "connected growers" is defined by the author as linguistic subsystems that develop symbiotically as they interact. In other words, linguistic subsystems such as complexity and accuracy were found to have a positive correlation. This finding has major implications not only for our understanding of complex dynamic systems, but also, of SLA in particular, as during L2 linguistic performance, complexity and accuracy often compete with each other for cognitive resources and positive correlations between these two areas have been less common in the literature (Skehan, 2009).

Skehan & Foster (1997) and Yuan & Ellis (2003) found trade-off effects in demanding tasks, in their Complexity, Accuracy and Fluency (CAF) language-learning studies. CAF represents three types of performance dimensions utilized to measure a learner's language production. From a psycholinguistic view of language proficiency, these studies found that learners are unable to simultaneously attend to all components of language performance at high levels. For example, Skehan & Foster (1997) examine the effects of planning and post-task activity on task-based performance. The authors review the effects of three different types of tasks, including a personal task, a narrative task and a decision task, on the fluency, accuracy and complexity of the language produced when each task is carried out. They found that planning time seems capable of being channeled to only one of the three performance measures (CAF). The authors conclude that evidence for trade-off effects are very strong as learners required to complete tasks seem unable to prioritize equally the three performance aspects of fluency, accuracy and complexity. Accuracy was measured by the percentage of error-free clauses while the level of subordination measured complexity. Subordination determined by the total number of clauses divided by the total number of c-units (an utterance providing referential or pragmatic meaning). As the results indicated, achieving in one of the performance measures appears to be at the expense of doing well on the others, "with competition between accuracy and complexity particularly evident" (p. 207). Yuan & Ellis (2003) found that planning contributes to more complex constructions and that the primary competition involves fluency and accuracy. The

measures for accuracy similar to Yuan and Ellis of the percentage of error free clauses but included a second measure of error-free verbs. For complexity, three measures were utilized; syntactical complexity, syntactical variety, and lexical variety. However, it is important to note that the trade-off effects found in these studies are the result of oral production, unlike the written production data utilized in Van Horn's (this issue) study.

As a result of their limited cognitive resources, learners must prioritize one component over others. This view aligns with CDST in that systems and subsystems may interact in negative ways, in competition with one another. Due to each performance area or subsystem (Complexity, Accuracy and Fluency) requiring attention and working memory involvement at the same time, the system (i.e. learner) can only commit the limited attentional resources towards some but not all subsystems at a time. At the same time, some subsystems may also interact in positive ways, such as "connected growers." This is demonstrated by Skehan's (2009) study, which found that fluency may be accompanied by either accuracy or complexity, but not both. Skehan attributes this to the Trade-Off Hypothesis, which predicts that committing attention to one area, with other factors being equal, might cause lower performance in others. However, contrary to the hypothesis and the CAF studies referenced in this paper, Van Horn found a positive relationship between accuracy and propositional complexity in her finding of the L2 learner's written asynchronous correspondence with the native speaker. Was this the result of the difference in learner data between written and oral language production? Or perhaps a difference in the measures used by Van Horn. For accuracy, Van Horn utilized an error analysis that examines the types of errors and whether they showed variability between and within participants over time. For complexity, Van Horn utilized Ellis and Barkhuizen's (2005) definition of propositional completeness. It includes the number of major and minor idea units within the text measured proposition complexity, where major idea units consisted of those that convey essential content of the message and minor idea units as the details that add to the message but are not essential. This contrasts with the complexity measures in the CAF studies that focused on syntactical and lexical complexity and subordination.

In her discussion, Van Horn attributes the L2 learner's high frequency of minor idea units with "possessing more knowledge with which to comment and add to the details related to major idea units proposed..." (p. 12). Van Horn also suggests that an increase in the L2 student's minor idea units "could have been impelled by this learner's motivation to share additional details with her conversation partner due to this learner's investment in the topic" (p. 12). In other words, the L2 participant may have provided more details or minor idea units on topics about which she knew more information and was thus more motivated to discuss. Therefore, was the positive correlation between accuracy and complexity based on the learner's ability to tag-on details on particular topics sufficient enough to determine her ability to communicate consistently both accurately and with complexity? Nevertheless, due to the nature of asynchronous email exchanges, like the CAF studies, the conditions allowed for planning for production; however, it also allowed for editing. Is this the reason why complexity and accuracy were found to have a positive relationship rather than be in competition with each other? Perhaps if the written production were synchronous a negative correlation would be found between accuracy and complexity due to the lack of time and constrain in cognitive resources; however, this is an empirical question.

Van Horn provided a new perspective of the changes in the L2 student's interlanguage utilizing a Complex Dynamic Systems Theory framework. Van Horn also completed the analysis with the L1 participant. When comparing the accuracy and complexity of the L1 participant's

written correspondences with that of the L2 participant, Van Horn noticed some differences and similarities. Both participants experienced a drop in error rate and increase in minor idea units over time. However, the L2 students exhibited a variety of errors whereas the L1 interlocutor's errors were less diverse. The most interesting interlanguage explanation given by Van Horn is the influence of the L1 interlocutor. Since the L1 participant's writing was relatively stable with respect to the frequency of minor idea units, Van Horn hypothesizes that, due to the interactional exchange, the L2 participant began to model the L1 participant's writing style by employing the use of minor idea units in her writing. Although further analysis is required to test this hypothesis, this position demonstrates CDST's explanation of systems interacting with each other, or intra-personal dynamicism. Therefore, thanks to Van Horn's study, we can understand interlanguage as a system, which interacts with other external systems (i.e. native speakers), while also consisting of interdependent systems (i.e. accuracy and complexity) that interact with each other

REFERENCES

- Ellis, R., & Barkhuizen, G. (2005). *Analyzing learner language*. Oxford: Oxford University Press.
- Levelt, W.J.M. (1989). *Speaking: From intention to articulation*. Cambridge: MIT Press.
- Skehan, P. (2009). Modeling second language performance: Integrating complexity, accuracy, fluency, lexis. *Applied Linguistics*, 30(4), 1-23.
- Skehan, P., & Foster, P. (1997). Task type and task processing conditions as influences on foreign language performance. *Language Teaching Research*, 1(3), 185-211.
- Spoelman, M., & Verspoor, M. (2010). Dynamic patterns in development of accuracy and complexity: A longitudinal case study in the acquisition of Finnish. *Applied Linguistics*, 31(4), 532-553.
- Verspoor, M., Lowie, W., & Van Dijk, M. (2008). Variability in second language development from a dynamic systems perspective. *The Modern Language Journal*, 92(2), 214-231.
- Yuan, F., & Ellis, R. (2003). The effects of pre-task planning and on-line planning on fluency, complexity and accuracy in L2 monologic oral production. *Applied Linguistics*, 24(1), 1-27.

Jordan González is a doctoral student in Applied Linguistics at Teachers College, Columbia University, specializing in Second Language Acquisition. His research interests include written corrective feedback and Spanish heritage language teaching and learning. He has been working in NYC public schools for the past five years as a high school Spanish teacher and English as a New Language (ENL) teacher. Correspondence should be sent to Jordan Gonzalez, 2838 Lafayette Avenue, Bronx, NY 10465. Email: jg3486@tc.columbia.edu.