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# How do linguistic features of learner texts relate to fluency in L2 writing? A keystroke-logging study

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## Résumé

Over the last fifteen years, a large body of evidence has accumulated pointing to L2 learners' difficulty in mastering syntactic phenomena at the interface with discourse constraints. Several studies linked this acquisition challenge to the processing cost inherent in coordinating information from different grammar modules in real time (Hopp, 2009; Sorace, 2011). However, whereas processing effects were identified in on-line studies involving the comprehension of a variety of phenomena (null and overt subject pronouns, scrambling, left-dislocation with clitic resumption), little is known with regard to the interplay between learners' performance at the syntax-discourse interface and processing effort in L2 production. In order to fill this gap, the present study addresses the question whether there is a relationship between indicators of writing fluency and the syntax-discourse make-up of learner compositions. More concretely, our aim is to establish whether learners' ability to use of wide range of syntactic structures for enhancing textual coherence translates into a more fluent orchestration of the writing process.

In order to gain insight into learners' cognitive performance while writing, process data were obtained using the keystroke-logging software Inputlog, which has been developed to record all keyboard and mouse activities during text production. Keystroke-logging data were collected from an experiment among 30 intermediate-to-advanced L2 learners of German who wrote an expository text. Focusing on product features, all texts were segmented into clauses, which served as reference units for coding a measure of textual coherence and an index of syntactic diversity. Textual coherence was calculated based on two subsets of cohesive devices: anaphoric reference and discourse connectors. With respect to syntactic diversity, an overall score was derived from seven sublevels: clause type, sub-clause type, finiteness, voice, verb valency, number of adjuncts and constituent order. Turning to process features, fluency was operationalized in terms of pausing behavior and measured based on length and location of pauses (within words, between words and between sentences).

Pearson's correlations were calculated between product and process features, which revealed a significant negative relationship between both measures of textual coherence and syntactic diversity on the one hand and mean length of pause at lower linguistic levels (within word and between words) on the other hand. These findings are in line with previous studies demonstrating that less experienced L2 writers tend to allocate more processing resources to lower-level issues (spelling, lexical retrieval) at the cost of more complex processes such as clause/sentence structure and discourse organization (Chenoweth & Hayes, 2001; Van Waes & Leijten, 2015).

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\*Intervenant

Chenoweth, N. A., & Hayes, J. R. (2001). Fluency in Writing: Generating Text in L1 and L2. *Written Communication, 18*(1), 80-98.

Hopp, H. (2009). The syntax–discourse interface in near-native L2 acquisition: Off-line and on-line performance. *Bilingualism: Language and Cognition, 12*(4), 463-483.

Sorace, A. (2011). Pinning down the concept of "interface" in bilingualism. *Linguistic Approaches to Bilingualism, 1*(1), 1-33.

Van Waes, L., & Leijten, M. (2015). Fluency in writing: A multidimensional perspective on writing fluency applied to L1 and L2. *Computers and Composition: An International Journal, 38*, 79-95.

**Mots-Clés:** Syntax, discourse interface, L2 processing, writing fluency, product, process approach,  
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