Phrasal complexity in academic writing: A comparison of abstracts written by graduate students and expert writers in applied linguistics

Ahmad Ansarifar [a], Hesamoddin Shahriari [b, *], Reza Pishghadam [b]

[a] Ferdowsi University of Mashhad, Iran
[b] Department of English, Ferdowsi University of Mashhad, Iran

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ABSTRACT

Academic research articles often involve the frequent use of lengthy noun phrase structures, and those seeking to write such texts, both native and non-native alike, would need to become familiar with this characteristic feature of the register. Biber, Gray and Poonpon (2011) have hypothesized a series of stages predicting development in writing complexity through the increased use of complex phrasal constructions. The purpose of this study is to compare abstracts by MA-level L1 Persian writers, PhD-level L1 Persian writers, and published writers from the field of applied linguistics in terms of phrasal modification features. Our findings revealed that the MA group differed significantly from the expert writers in the use of four types of modifiers: pre-modifying nouns; -ed participles as post-modifiers; adjective-noun sequences as pre-modifiers; and multiple prepositional phrases as noun post-modifiers. The PhD group however did not show any significant difference in producing noun modifiers when compared to expert writers except for multiple prepositional phrases as noun post-modifiers. The findings of this study help further our understanding of how academic writing becomes more complex with experience.

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1. Introduction

In addition to accuracy and fluency, syntactic complexity or "the range of forms that surface in language production" and their respective sophistication (Ortega, 2003, p. 492) form the main components of the Complexity, Accuracy and Fluency (CAF) triad (i.e., the three-dimensional L2 proficiency model proposed by Skehan, 1989). Ellis (2003, p. 340) defines complexity as "[t]he extent to which the language produced in performing a task is elaborate and varied", while he refers to accuracy as the ability to produce language that is error free and characterizes fluency as the extent to which the language produced involves pauses, hesitations and/or reformulations (Ellis, 2003). These three components have been the focus of many studies into second/foreign language learning (Housen & Kuiken, 2009). Although the three constructs are recognized to be closely interrelated, much research has focused on one of the three dimensions: syntactic complexity (Vyatkina, 2012). Since the growth of a learner's syntactic repertoire is believed to be key to his/her development in the language being learned (Ortega, 2003), syntactic complexity is now recognized as an important construct in L2 writing instruction and research.

* Corresponding author. Department of English and Applied Linguistics, Ferdowsi University of Mashhad, Azadi Square, Mashhad, Iran.
E-mail addresses: ahmad.ansarifar@mail.um.ac.ir (A. Ansarifar), h.shahriari@um.ac.ir (H. Shahriari), pishghadam@um.ac.ir (R. Pishghadam).

Among the list of measures used to analyze syntactic development and complexity in second language academic writing, phrasal embedding has been largely ignored and has only recently been receiving attention from researchers. This is because most of the studies in the field (e.g., Beers & Nagy, 2009; Ellis & Yuan, 2004; Hunt, 1965; Jiang, 2012; Stockwell & Harrington, 2003) have traditionally focused on clausal embedding and subordination measures based on the assumption that academic writing derives its complexity from the elaborate use of clausal constructions (Biber & Gray, 2010). A number of studies (e.g., Biber & Clark, 2002; Biber & Gray, 2010; Biber, Gray & Ponpoon, 2011) have found academic writing to be characteristically dense with non-clausal phrases and complex noun phrases, while at the same time reporting a relative absence of clausal elaboration. As a consequence, more studies are needed to investigate the role of phrasal embedding in the development of academic writing complexity. Studies such as Lu (2011), Parkinson and Musgrave (2014) and Biber, Gray, and Staples (2014) have shown that phrasal features tend to increase across levels of study in second language writing. Ravid and Berman (2010) and Staples, Egbert, Biber, and Gray (2016) have also found that phrasal features develop during university years in the writing of L1 English students.

Similarly, this study aims to investigate the development of noun phrase complexity in the academic writing of graduate students at different levels of academic study, comparing the observed patterns of use to those by expert writers.

1.1. Measures of syntactic complexity in L2 writing

Numerous studies have sought to find an objective and reliable metric for successfully gauging learners' syntactic development in L2 writing (e.g., Larsen-Freeman, 1978, 2009; Lu, 2011; Ortega, 2003; Wolfe-Quintero, Inagaki, & Kim, 1998). Most of the proposed indices have taken on the form of ratios, frequencies or formulas (Norris & Ortega, 2009), and are calculated using one of the following criteria: (a) the length of the production unit, (b) the amount of subordination, (c) the amount of coordination, (d) the range of syntactic structures and degree of phrasal sophistication.

Larsen-Freeman (1978) noted the need for a measure to serve as a yardstick in making a distinction between learners with different levels of writing proficiency. In a quest for global indices, Wolfe-Quintero et al. (1998) examined more than 100 measures of CAF in 39 L2 developmental studies. Having reviewed a highly representative set of measures used in the body of research in this area, the authors of this seminal study concluded that clauses per T-unit and dependent clauses per independent clause were the best measures of syntactic complexity. As a possible consequence of this recommendation, most studies into L2 writing development since Wolfe-Quintero et al. (1998) have primarily relied on T-unit-based measures (e.g., Beers & Nagy, 2009; Casanave, 1994; Elder & Iwashita, 2005; Ellis & Yuan, 2004; Jiang, 2012; Larsen-Freeman, 2006; Stockwell & Harrington, 2003). Ortega (2003) also reviewed 27 studies on grammatical complexity and found that no measure was used as pervasively as mean length of T-unit (MLTU) and clause per T-unit (C/TU). In her meta-analysis, 25 studies relied on MLTU, while 11 used the measure of C/TU.

Biber et al. (2011) used a large-scale corpus of academic texts to describe the distribution of 28 grammatical features in formal academic writing and compared them with their distribution in conversation. The study involved an academic writing corpus of 429 research articles including approximately 3 million words and a conversation corpus of 4.2 million words of American English. Biber et al. (2011) went on to challenge two stereotypes which they believed to be deeply rooted in developmental studies of L2 writing: first, that subordination is the best measure of syntactic complexity; and second, that academic writing is obviously more complex than conversation in terms of subordination. The two major findings of their study included the following: (1) complex noun phrases (i.e., a head noun modified by noun modifiers such as attributive adjectives, prepositional phrases, etc.) are much more appropriate measures of grammatical complexity in academic writing as opposed to embedded clauses (e.g., *I don't know [[why I was expecting [to see something else]]*; Biber et al., 2011), and (2) conversation is more complex than academic writing, if only clausal subordination measures (e.g., mean length of T-Unit) are to be considered (as in the case of most previous studies into L2 writing). In the discussion of their findings, Biber et al. (2011) challenged the usefulness of MLTU and C/TU in developmental studies of L2 writing, arguing that dependent clause-based measures are more characteristic of conversation than they are of academic writing. They claimed that despite the widespread acceptance of these two metrics, little empirical evidence exists to corroborate the use of T-unit measures and dependent clause measures for evaluating writing development. Instead, they proposed phrasal embedding (e.g., the use of multiple prepositional phrases) as an alternative index for gauging complexity in academic writing.

In their critical evaluation of T-unit measures, Biber et al. (2011) also challenged the assumption that T-unit-based measures and simple subordination could be used to trace the development of complexity in L2 writing across proficiency levels. They maintained that perhaps because of the shortcomings of T-unit-based measures of grammatical complexity, developmental studies of L2 writing have failed to produce consistent results (see Ortega, 2003; Wolfe-Quintero et al., 1998). They further argued that the biggest shortcoming of T-unit measures is their failure to capture non-clausal features that are embedded in noun phrase constructions. Lu (2011) also stated that measures of complex nominals (i.e., complex nominals per clause, and complex nominals per T-unit) along with coordinate phrases have "stronger discriminative power than most other measures" (p.57). He too recommended a closer examination of complexity at the phrasal level in future studies. In another study, Taguchi, Crawford, and Wetzel (2013) found no positive correlation between proficiency and complexity at the clausal level, and therefore argued that considering subordination as the only measure of complexity is an oversimplification of the construct; and that dependent clause complexity measures do not necessarily characterize academic writing. In line with Biber et al. (2011), they concluded that noun phrase modification is a strong contributor to writing quality. Finally, in a longitudinal analysis of L2 writing development over one university semester, Crossley and McNamara (2014), demonstrated