

Lexical Bundles in English Review Articles

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Abstract

This study was an attempt to shed light on the formulaic nature of the language of theoretical review articles. The study was based on a corpus of 517 English review articles from linguistics and applied linguistics disciplines. Following a corpus-driven discourse analytic approach, we identified four-word bundles occurring at least 20 times per million words in at least five different articles and investigated their structural and functional features. The results showed that the dominance of text-oriented and phrasal bundles, especially framing signals and prepositional phrases, indicates the highly informational nature of review articles in linguistics and applied linguistics and the importance of organizational features of discourse in articles. Moreover, the low proportion of participant-oriented bundles and resultative signals implies the writer's avoidance to make claims and interpretations in English review articles. Additionally, the varied and frequent use of the anticipatory-*it* structure among clausal bundles, the low proportion of engagement bundles, and the fact that this dialogic feature of article writing was conveyed through an impersonal construction point to the writer's reluctance to explicitly show commitment to his/her evaluations. Finally, expressing stance through anticipatory-*it* constructions and shell nouns indicates the writer's intention to hide or foreground authorial observations, interpretations, and claims.

Keywords: Lexical Bundles, Review Articles, Functional Analysis, Structural Analysis

1. Introduction

Review articles are essential for successful research and an academic project because they cover a specific topic comprehensively ([Gasparyan, Ayyazyan, Blackmore, & Kitas, 2011](#)). One review article could replace several research articles. Instead of reading a large number of articles, the reader may read one comprehensive review article ([Virgo, 1991](#)). Review articles can also attract more citations than other articles and contribute greatly to the impact factor of journals ([Gasparyan, 2010](#)). In spite of their versatile functions, i.e., to organize, synthesize, and evaluate literature, to identify patterns, trends, and gaps in the literature, and to recommend new research areas ([Mayer, 2009](#)), they are not commonplace and very few of them are published in scientific periodicals, at least in linguistics and applied linguistics fields. One reason for their limited circulation is that they are complex to write and this complexity is mainly because the overall structure or format of such papers is not clear ([Webster & Watson, 2002](#)). This difficulty is more serious for university students because of their limited competency and repertoire. Therefore, raising their awareness of how to write a good review article is undoubtedly crucial. According to [Hagger \(2012\)](#), "features that make a good review article are originality, advances knowledge and original thinking, theory-based, evidence-based, accurate, comprehensive and rigorous, recommendations for future enquiry, and stimulates debate" (p. 141).

Research shows that language is formulaic (e.g., [Granger & Meunier, 2008](#); [Sinclair, 2004](#); [Wray, 2002](#); [Wray & Perkins, 2000](#)) and awareness of formulas leads to more successful language production (e.g., [Conklin & Schmitt, 2012](#)). Evidence for this comes from studies that have shown bundles are stored and retrieved as wholes or chunks from memory through holistic rather than analytical processes ([Conklin & Schmitt, 2008](#); [Ellis, 2002a, b](#); [Wray, 2002](#)). formulas, clusters, n-

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grams, phrasal expressions, fixed expressions, recurrent word combinations, multi-word constructions, or lexical bundles are “recurrent expressions, regardless of their idiomaticity, and regardless of their structural status” (Biber, Johansson, Leech, Conrad, & Finegan, 1999, p. 990) which “show a statistical tendency to co-occur” (Biber & Conrad, 1999, p. 183). Hyland (2008a) defined them as “words which follow each other more frequently than expected by chance, helping to shape text meanings and contributing to our sense of distinctiveness in a register.” (p. 5). Lexical bundles are different from other kinds of formulaic expressions: (a) they are extremely common and are thus frequency-driven; (b) they are not idiomatic in meaning and lack perceptual salience; (c) they do not represent complete structural units, and are thus grammatically incomplete; yet, they are associated with certain structural categories; (d) they serve clearly defined functions and are thus functionally complete (Biber & Barbieri, 2007; Chen & Baker, 2010; Conrad & Biber, 2005; Hyland, 2008a, b).

Lexical bundles are frequently employed in a register. According to Biber, Conrad, and Cortes (2004), frequency has a pivotal role in the identification of bundles. In addition, lexical bundles “are one reflection of the extent to which a sequence of words is stored and used as a prefabricated chunk, with higher frequency sequences more likely to be stored as unanalyzed chunks than lower frequency sequences” (p. 376). Cortes (2015) also states that frequency is the ultimate quality of lexical bundles. Research shows that frequent use of appropriate lexical bundles equals language development (Coxhead & Byrd, 2007; Li & Schmitt, 2009; Nesselhauf, 2004).

Several studies have investigated the structural features of lexical bundles in different disciplines and registers (e.g., Biber et al, 1999; Biber, 2006; Biber & Conrad, 1999; Biber et al., 2004; Güngör, 2016; Hyland, 2008a, b; Jalali & Zarei, 2016; Ruan, 2016). According to Biber et al. (1999), there are two broad structural categories for bundles: phrasal and clausal where phrasal bundles are divided into three sub-categories: NP-based, PP-based, and VP-based. Research shows that bundles consist of noun (e.g., the fact that the) and prepositional (e.g., in the case of) phrases, adjectival phrases (e.g., is the same as), passives (e.g., can be seen in), and anticipatory-it constructions (e.g., it should be noted) (e.g., Biber et al., 1999). *In academic writing, most bundles are phrasal, either part of a noun or prepositional phrase* (e.g., Biber et al., 1999; Biber et al., 2004). *On the other hand, in conversation, most bundles are clausal* (e.g., Biber et al., 1999).

Lexical bundles have also been functionally classified and investigated (Biber et al, 2004; Biber, 2006; Cortes, 2004, 2013; Esfandiari & Barbary, 2017; Hyland, 2008a, b; Jalali & Zarei, 2016; Qin, 2014; Ruan, 2016). Biber et al. (2004) divided them into stance expressions, discourse organizers, and referential expressions. Referential bundles “make direct reference to physical or abstract entities, or to the textual context” (e.g., *the subject of the*) (Conrad & Biber, 2005, p. 67). Discourse organizers “reflect relationships between prior and coming discourse” (e.g., *can be found in*) (Conrad & Biber, 2005, p. 67). “Stance bundles express attitudes or assessments that provide a frame for the interpretation of the following proposition” (e.g., *it is not clear*) (Conrad & Biber, 2005, p. 65). Hyland (2008a, 2008b) modified the above classification and put forth a new taxonomy, based on Halliday's (1994) tripartite metafunctions of language (ideational, textual and interpersonal). He changed the labels to research-oriented, text-oriented, and participant-oriented, respectively. Research-oriented bundles concern real world activities or experiences and include location, procedure, quantification, description, and topic. Text-oriented bundles deal with the organization of the text and include transition, resultative, structuring, and framing signals. Lastly, participant-oriented bundles orient to the reader or writer of the text and include stance and engagement features. Research shows heavy use of research-oriented bundles in master students' discourse and text-oriented bundles in PhD dissertations and published research articles; participant-oriented bundles are used less frequently than the other two categories in academic discourse (e.g., Hyland 2008a, b). Research also points to a close connection between the structure and function of bundles. For example, prepositional phrases largely constitute text-oriented bundles or discourse organizers; noun phrases with *of*-phrases largely occur in research-oriented or referential bundles; anticipatory-it constructions are prominent in participant-oriented or stance bundles; and passive constructions mostly structure discourse (e.g., Biber et al., 2004; Hyland, 2008a; Pan, Reppen, & Biber, 2016).

To the best of our knowledge, almost all the studies that have dealt with lexical bundles so far have focused on research papers and review articles have been left unexplored. Whereas research papers are written on the results of an empirical research project, conducted by the authors of the paper, review articles summarize the results of previous studies and present the current understanding of the topic. Virgo (1971) investigates the characteristics and problems associated with review articles and identifies three major classes of review articles: the annual review, the critical review, and data compilations. [Noguchi \(2007\)](#), [Dochy \(2006\)](#) and Mayer (2009) also classify review articles. Noguchi (2007) categorizes them into status quo review, history review and issue review, Dochy (2006) divides them into integrative, theoretical or conceptual, methodological, and thematic review articles. Mayer's (2009) taxonomy includes systematic review, best-evidence synthesis, and narrative review. In a systematic review, findings from different studies are statistically analyzed by strict procedures (Mayer, 2009). A theoretical review, however, describes the evolution of theories and the way they are understood in different contexts (Dochy, 2006).

Overall, a research article describes a study that was performed by the article's author(s). It explains the methodology of the study, such as how data was collected and analyzed, and clarifies what the results mean. A review article, however, does not describe original research conducted by the author(s). Instead, it gives an overview of a specific subject by examining previously published studies on it. Given the clear distinction between research papers and review articles, and the fact that no prior study has lent itself to an / the investigation of lexical bundles in English review articles, it is necessary to shed light on the formulaic nature of the language of this highly neglected written academic genre. To this end, this study was aimed to identify an empirically derived list of lexical bundles, commonly used in English linguistics and applied linguistics review articles, and investigate their structural and functional features.

2. Methodology

2.1. Corpus

The study was based on a corpus of 517 English review articles from linguistics and applied linguistics disciplines, published between 2000 and 2018, totaling 4,611,067 words. Table 1 presents description of the corpus.

Table 1: Description of the Data

Discipline	Publisher	Journal	Article count	Year
Applied linguistics	Oxford	Applied Linguistics	13	2000-2018
		ELT Journal	19	2000-2018
	Cambridge	Language Teaching	15	2000-2018
		Annual Review of Applied Linguistics	16	2000-2018
		ReCALL	17	2000-2018
	Elsevier	Studies in Second Language Acquisition	14	2000-2018
		System	16	2000-2018
		Journal of English for Academic Purposes	20	2000-2018
	Wiley	Journal of Second Language Writing	21	2000-2018
		TESOL Quarterly	18	2000-2018
		Language Learning	18	2000-2018
		The Modern Language Journal	15	2000-2018
	Sage	International Journal of Applied Linguistics	12	2000-2018
		Language Testing	15	2000-2018
		RELC Journal	17	2000-2018
Linguistics	Routledge - Taylor & Francis	Computer Assisted Language Learning	13	2000-2018
	Cambridge	Journal of Linguistics	17	2000-2018
Linguistics	Elsevier	Lingua	21	2000-2018
	De Gruyter Mouton	Theoretical Linguistics	24	2000-2018
		Linguistics	18	2000-2018
		The Linguistic Review	22	2000-2018

Routledge - Taylor & Francis	Australian Journal of Linguistics	23	2000-2018	
John Benjamins	Annual Review of Cognitive Linguistics	16	2000-2018	
	International Journal of Corpus Linguistics	19	2000-2018	
Linguistic Society of America	Language	20	2000-2018	
Sage	Second Language Research	25	2000-2018	
Annual Reviews	Annual Review of Linguistics	15	2000-2018	
Brill	International Review of Pragmatics	17	2000-2018	
	Journal of Greek Linguistics	21	2000-2018	
Total	15	29	517	2000-2018

As Table 1 shows, the articles were selected from a wide variety of world leading linguistics and applied linguistics publishers and journals. With publishers and journals following different norms, this was done to ensure our corpus is representative of review articles. However, only conceptual or theoretical review articles, rather than systematic reviews, were gathered in the corpus. This was mainly because systematic reviews are different from conceptual review articles and demand to be considered separately. Systematic reviews contain methodology sections and involve synthesizing data from already published articles into a single quantitative estimate or summary effect size (Petticrew & Roberts, 2006). In contrast, conceptual review articles lack methodology sections and include only those parts of the literature that support a certain perspective (Callahan, 2010). The reason for choosing linguistics and applied linguistics disciplines was because they are closely related and there is overlap in their thematic topics. In addition, as Ruiying and Allison (2003) point out, “besides being still relatively underresearched, applied linguistics is of particular interest for pedagogic reasons, because raising awareness of genre features becomes directly relevant as part of its disciplinary content as well” (p. 366).

2.2. Analytical Procedure

Generally, there are two approaches to the study of formulaic sequences. The first approach involves selecting which word sequences to focus on based on the related literature. Here, an already established list of frequent formulaic sequences is used as the basis for comparison (e.g., Nattinger & DeCarrico, 1992). The second approach, however, relies on the results of corpus linguistic tools, such as AntConc, WordSmith, and Sketch Engine, to identify bundles in different genres or registers. In the present study, we followed the second approach. In this sense, the approach followed here was corpus-driven and discourse analytic in accordance with Hyland’s (2008b) approach. The corpus-driven nature of the study in identifying bundles is rooted in the fact that we did not rely on an already established list of bundles and approached the corpus of this study with no preconception about possible bundles and an open mind to see what bundles emerge (Tognini-Bonelli, 2001). The discourse analytic nature of the study is related to the study of structural and functional features of bundles in English review articles.

Three criteria were considered to identify lexical bundles in review articles: length, frequency, and range. The length refers to the number of words a lexical bundle consists of. Studies focus on three, four, five, or even six-word bundles. “Three-word bundles are extremely common, and tend not to be very interesting, while 5- and 6-grams are comparatively rare and often subsume shorter ones” (Hyland, 2012, p. 151). “Four-word bundles seem to be most often studied, perhaps because they are over 10 times more frequent than five-word sequences and offer a wider variety of structures and functions to analyze”, according to Hyland (2012, p. 151). Frequency refers to the number of times a word sequence has to occur in the entire corpus to qualify as a lexical bundle. Determining frequency thresholds is arbitrary, and depends on corpus size and mode of language (Cortes, 2015). Frequency cut-offs may range from 10 (e.g., Biber et al., 1999) to 20 (e.g., Cortes, 2004; Hyland, 2008a, 2008b), and 40 (e.g., Biber, et al., 2004) times per million words (pmw) in different studies. Based on frequency cut-off and corpus size, raw frequencies are computed for each study. Range or dispersion deals with the number of texts a word sequence has to occur to qualify as a lexical bundle. The range is computed “to guard against idiosyncratic uses by individual speakers or authors” (Biber

et al., 2004, p. 376). Range might be set from three (e.g., Biber et al., 1999) to five (e.g., Cortes, 2013), depending on the length and number of texts in the corpus (Hyland, 2008a, b). A high distribution indicates that lexical bundles are typical of the whole corpus (Hyland, 2012). Using WordSmith 7 (Scott, 2017), we created a list of four-word bundles occurring at least 20 times per million words (with the minimum raw frequency of 92) in at least five different articles.

Next, we used WordSmith Concord tool to analyze the typical discourse function each bundle served, following Hyland's (2008b) classification. This was based on a discourse analytic approach where the function of each bundle was determined by investigating its co-text in WordSmith Tools. As Hyland (2008b) notes, "while a corpus can tell us which clusters are frequent, an explanation of why they are frequent can only come from texts" (p. 47). In some cases, a single bundle had multiple functions. Such bundles were classified according to their most common use. To avoid the subjectivity inevitable in the functional analysis of texts, we investigated the functions of bundles independently. Here, a Cohen's kappa of 0.84 was reached. In the case of any disagreement in the functional investigation, we consulted a third researcher. Additionally, we invited a third researcher to investigate the functions of a random sample of 35 bundles in order to ensure precision in our functional investigation. Here, a Cohen's kappa of 0.80 was calculated. Finally, we used WordSmith again to analyze the structural features of the identified bundles, following Biber et al.'s (1999) classification.

3. Results and Discussion

A total of 98 four-word lexical bundles occurring at least 20 times per million words in at least five different review articles were found. These bundles totaled 16,525 individual cases which account for about 1.5% of all the words in the corpus. Among them, *on the other hand*, *in the case of*, *on the basis of*, *at the same time*, *in the context of*, *the fact that the*, *as well as the*, *with respect to the*, *on the one hand*, and *in terms of the* were the top 10 bundles. Their frequency from the first to the 10th most frequent bundle ranged from 780 to 290. In line with Hyland (2008b), most of the bundles are part of *of*-prepositional phrases. Most of these bundles are the same as those found in academic discourse in previous research (e.g., Biber & Barbieri, 2007; Biber et al., 1999; Cortes, 2013; Esfandiari & Barbary, 2017; Hyland, 2008a, b, 2012; Pan et al., 2016; Qin, 2014; Ruan, 2016). The functional and structural analysis of the bundles follows in the next two sections.

3.1. Functional Analysis of Bundles

Table 2: Functions of Lexical Bundles in English Review Articles

Function	No. of different bundles	Freq.	%
Research-oriented	39	5623	34.02
Text-oriented	42	8180	49.50
Participant-oriented	17	2722	16.48
Total	98	16525	100

As Table 2 shows, lexical bundles in English linguistics and applied linguistics review articles serve all the three major functions, put forth by Hyland (2008b). These include research-oriented, text-oriented, and participant-oriented functions. Text-oriented functions were dominant, followed by research-oriented and participant-oriented functions, contrary to Jalali & Zarei's (2016) findings and in line with Pan et al.'s (2016) and Hyland's (2008a, b) findings for research articles, PhD dissertations, and academic discourse in soft disciplines overall. This dominance was both in their variety, as most of the bundles (42 bundles) were text-oriented, and frequency, as about half of all the occurrences of bundles were text-oriented. The reason Jalali and Zarei (2016) found most of the bundles in applied linguistics articles to be research-oriented is mainly that their corpus comprised research papers. However, the corpus of this study only comprised the review article genre and the review article does not report on the results of an empirical investigation. Instead, it summarizes the results of previously published studies by others and presents the current understanding of the topic. Therefore, English review articles relied, for the most part, on text-oriented functions dealing with

“the organization of the text and the meaning of its elements as a message or argument” (Hyland, 2008b, p. 49). As Biber and Barbieri (2007, p. 273) point out, “the extent to which a speaker or writer relies on lexical bundles is strongly influenced by their communicative purposes, in addition to general spoken/written differences”. Moreover, in the international English academic community, because of the high pressure on them to publish and promote their research, academics have to “sell” rather than “tell” their research ([Yakhontova, 2002, as cited in Van Bonn & Swales, 2007](#)). Therefore, organizational features become crucially important in articles and this is supported by the dominance of text-oriented bundles. Hyland sees this as “representing a more sophisticated approach to language as these advanced students sought to craft more “academic” reader-friendly prose and make more concerted attempts to engage their readers” and an attempt “to present themselves as competent academics immersed in the ideologies and practices of their fields” (2008b, p. 56). Moreover, the highly frequent and varied nature of text-oriented bundles in English review articles is related to the fact that published articles deal more with knowledge making and disseminating as a norm developing genre ([Swales, 1990](#)) than with the display and assessment of students’ subject knowledge of the field as a norm developed pedagogic genre (Cortes, 2004; Hyland, 2008b). As a highly “discursively crafted and rhetorically machined genre” (p. 58), the published article is “concerned with persuasive reporting through the review process and engagement with the professional world of writing” (p. 57), where the research is presented “to a disciplinary audience by engaging with a literature, providing warrants, establishing background, connecting ideas, directing readers around the text and specifying limitations” (Hyland, 2008b, p. 58). In this regard, Hyland (2008a) points out that the dominance of text-oriented bundles

reflects the more discursive and evaluative patterns of argument in the soft knowledge fields, where persuasion is more explicitly interpretative and less empiricist, producing discourses which often recast knowledge as sympathetic understanding, promoting tolerance in readers through an ethical rather than cognitive progression (Hyland, 2004, as cited in Hyland, 2008a, p. 16).

What is important to note here is that in keeping with their versatile functions to organize, evaluate, and synthesize literature (Mayer, 2009), review articles also consist of research-oriented lexical bundles which deal with the real-world activities and experiences of other researchers whose studies are considered.

The low proportion of participant-oriented bundles in English review articles in both variety and overall frequency lends support to the findings of Jalali and Zare (2016), and Hyland (2008b) for research articles, PhD dissertations, master’s theses, and academic discourse overall. Using lexical bundles is not the only way to express stance or engage audience (e.g., [Zare & Keivanloo-Shahrestanaki, 2017](#); [Biber, 2006](#)). A detailed discussion of the functions of lexical bundles follows in the next three sub-sections.

3.1.1. Research-Oriented Bundles

Research-oriented bundles help writers to structure their real-world activities and experiences (Hyland, 2012). Hyland (2008a, b, 2012) divides research-oriented bundles into five categories, namely location, procedure, quantification, description, and topic. Location bundles indicate time (1) and place (2). There were 10 bundles of this type in English review articles. These include *at the same time*, *at the end of*, *in the same way*, *the rest of the*, *the head of the*, *the right edge of*, *to the left of*, *the same way as*, *the position of the*, and *the end of the*. Among them, *at the same time* was the most frequent bundle in the corpus with a frequency twice as much as the other bundles of this type. This is congruent with the findings of prior research (e.g., Cortes, 2013; Esfandiari & Barbary, 2017; Hyland, 2008a, b, 2012; Pan et al., 2016; Qin, 2014; Ruan, 2016). Most location bundles were part of a prepositional *of*-phrase and were related to linguistic concepts and described linguistic structures and processes.

- (1) In switching the focus from ..., we appear to have *at the same time* diverted ... (AL-7)
- (2) the negative marker may appear only *to the left of* n-words ... (L-17)

Procedure bundles describe real-world linguistic or applied linguistic issues (3). There were five bundles of this type in English review articles. These include *to be able to*, *the use of the*, *the role of the*, *in the process of*, and *that it is not*. Among them, *to be able to* was the most frequently occurring bundle which was also found in Biber and Barbieri (2007), and Esfandiari and Barbary (2017). Most of the bundles in this category were part of a noun phrase ending in *of*.

(3) However, an invitation ... the plural reference with *the use of the* singular. (L-125)

Quantification bundles, as the name suggests, give information about the number, amount, or variety of the elements following them (4). There were seven bundles of this type in English review articles, including *the extent to which*, *a wide range of*, *the ways in which*, *one of the most*, *to the extent that*, *a great deal of*, and *is one of the*. *The extent to which* was the most frequent bundle among research-oriented quantification bundles which was also found in other studies (e.g., Esfandiari & Barbary, 2017; Qin, 2014).

(4) What makes humane discourse different ... is one of the things we gain ... (AL-29)

Description bundles describe characteristics of linguistic elements or concepts following them (5). There were eight description bundles, including *the nature of the*, *in the form of*, *the presence of a*, *the meaning of the*, *the interpretation of the*, *the scope of the*, *the presence of the*, and *in the development of*. In line with Allen (2010), these bundles constitute a noun phrase ending in *of*. Among them, *the nature of the* was the most frequent one which is shared in other studies as well (e.g., Biber & Barbieri, 2007; Cortes, 2013; Pan et al., 2016).

(5) The critical element that distinguishes these two structures is the presence of ... (L-169)

Topic bundles are research-oriented bundles which are used to name the central themes (6) and terms (7), used in the research. What is important about topic bundles is that they are field-and research specific. There were nine bundles of this type in English review articles. These include *as an international language*, *the subject of the*, *Computer-assisted language learning*, *English as an international (language)*, *language teaching and learning*, *language learning and teaching*, *of English as a*, *of the target language*, and *as a lingua franca*, among which *as an international language* was the most frequent one. Almost all the individual occurrences of the bundle *the subject of the* were in linguistics papers and referred to the subject as a linguistic term (6).

(6) Varlokosta argues that ... if *the subject of the* embedded clause is PRO. (L-41)

(7) and this reinforces the role of English as a *lingua franca*. (AL-80)

Table 3: Functions of Research-Oriented Lexical Bundles in English Review Articles

Function	No. of different bundles	Freq.	%
Location	10	1726	30.70
Procedure	5	745	13.25
Quantification	7	1035	18.40
Description	8	1169	20.79
Topic	9	948	16.86
Total	39	5623	100

As Table 3 shows, among research-oriented expressions, location bundles were the most frequently used ones that are due to their very nature describing time and place, followed by topic, description, quantification, and procedure. Moreover, the varied and frequent use of topic bundles is related to the plethora of themes and terms discussed in English linguistics and applied linguistics review articles. Regarding description bundles, whereas Allen (2010) found description bundles primarily in the methods section of research papers, more than 20% of research-oriented bundles in conceptual review articles were found to be descriptive even though no such section existed in the corpus of this paper. The underrepresentation of procedure bundles in English review articles may be associated with the fact that such articles do not report on new data or experiments and as such lack method sections.

3.1.2. Text-Oriented Bundles

According to Hyland (2008a), text-oriented bundles are “concerned with the organization of the text and its elements as a message or argument” (p. 13). Hyland classifies them into transition, resultative, structuring, and framing signals. Transition signals establish additive (8) or contrastive (9) links between elements in the text (Hyland, 2008a). There were seven bundles of this type in English review articles, including *on the other hand*, *as well as the*, *on the one hand*, *in other words the*, *in addition to the*, *the one hand and*, and *as well as in*. The bundle *on the other hand* was the most frequent expression in the whole corpus, lending support to the findings of previous research (e.g., Allen, 2010; Pan et al., 2016; Ruan, 2016). This bundle was twice as frequent as the other bundles in this category. Another bundle in this category, i.e. *in other words the*, which has also been identified in PhD dissertations (Hyland, 2008b), was used to rephrase statements (10). Most transition bundles were part of prepositional phrases, used initially in sentences.

(8) *In addition to the* cross-modal priming experiments, a truth-value ... (L-127)

(9) *On the other hand*, and from a Marxist perspective, one can say that ... (AL-24)

(10) *In other words*, the successive-cyclic-A'-movement-as ... (L-133)

Resultative signals “mark inferential or causative relations between elements” in discourse (Hyland, 2008b, p. 49) (11). Four bundles of this type were found in English review articles, including *as a result of*, *to account for the*, *due to the fact*, and *the results of the*. Among them, *as a result of* was the most frequent bundle. This bundle is a shared finding of Cortes (2013), Esfandiari and Barbary (2017), Qin (2014), and Ruan (2016).

(11) Montanari (2011) suggested that ... *as a result of* early multilingual exposure. (AL-22)

Structuring signals are “text-reflexive markers which organize stretches of discourse or direct reader elsewhere in text” (Hyland, 2008b, p. 49) (12, 13). These bundles

help organize the text by providing a frame within which new arguments can be both anchored and projected, referring to text stages and announcing discourse goals, ... or pointing to other parts of the texts to make additional material salient and available to readers in recovering the writer’s intentions. (56-57)

There were eight bundles of this type in English review articles. These include in the next section, in this section we, in this section I, can be found in, can be seen in, in the course of, in this paper I, and in the previous section. Among them, *in the next section* was the most frequent bundle. This bundle was also found in Cortes (2013), Hyland (2008a, b), and Pan et al. (2016). Most structuring bundles consisted of a prepositional phrase beginning with *in* (12) or a passive construction ending with *in* (13) and were used to cross-reference or give information about different parts of the article.

(12) *In the next section*, we provide a brief overview of (AL-60)

(13) *As can be seen in* Figure 2, ... discussed *in the previous section* ... (AL-2)

Framing signals situate arguments by specifying limiting conditions (Hyland, 2008a, b). Framing bundles may “help writers to elaborate arguments by highlighting connections, specifying cases and pointing to limitations” (Hyland, 2008b, p. 58). There were 23 bundles of this type in English review articles. These include *in the case of*, *on the basis of*, *in the context of*, *with respect to the*, *in terms of the*, *at the level of*, *in the absence of*, *in the sense that*, *in the sense of*, *the basis of the*, *in relation to the*, *is not the case*, *the case of the*, *to do with the*, *in a way that*, *in this case the*, *as part of the*, *from the perspective of*, *is based on the*, *that is not the*, *on the part of*, *with regard to the*, and *as in the case*. Most of these bundles were part of prepositional phrases ending in *of*. Among them, *in the case of* and *on the basis of* were the most frequent bundles which were twice as frequent as the other framing expressions, lending support to the results of previous research (e.g., Biber & Barbieri, 2007; Cortes, 2013; Esfandiari & Barbary, 2017).

(14) This is well known *in the case of* wh-movement in English ... (L-40)

Table 4 presents the results of the functional analysis of text-oriented bundles in English review articles.

Table 4: Functions of Text-Oriented Lexical Bundles in English Review Articles

Function	No. of different bundles	Freq.	%
Transition signals	7	1948	23.82
Resultative signals	4	683	8.35
Structuring signals	8	946	11.56
Framing signals	23	4603	56.27
Total	42	8180	100

As Table 4 shows, framing signals were the dominant text-oriented expressions, followed by structuring, transition, and resultative signals. This is in line with Hyland (2008a, b). As Hyland (2008b, p. 56) notes, the extensive use of framing signals suggests a clear audience orientation and an attempt to organize their discourse in ways that readers are most likely to understand, but also lay claim to a certain disciplinary competence, demonstrating a care with both research and with language.

Additionally, the varied and frequent use of structuring and transition signals can be seen as an attempt to “frame, scaffold, and present arguments as a coherently managed and organized arrangement, reflecting writers’ awareness of the discursive conventions of a sustained discussion of the discursive expectations and processing needs of a particular audience” (Hyland, 2008b, p. 57). On the other hand, the underrepresentation of resultative signals which is contrary to Hyland’s (2008b) and Allen’s (2010) observation, is in keeping with the fact that the corpus of this study only constituted conceptual or theoretical review articles and such articles do not present new data or experiments and as such do not report on the results or outcomes of research, whereas Hyland’s and Allen’s corpora comprised research papers. As Hyland (2008b) notes, resultative bundles “signal the main conclusions to be drawn from the study and highlight the inferences the writer wants readers to draw from the discussion” (p. 58) and can thus “frame an assertive construal of events, boosting the writer’s position and directing readers to a categorical understanding” (p. 59). Therefore, the scarcity of resultative bundles may indicate that writers of English review articles leave interpretations and inferences to be made from the article to the readers themselves.

3.1.3 Participant-oriented Bundles

Participant-oriented bundles “focus on the writer or reader of the text” (Hyland, 2005, as cited in Hyland, 2008b, p. 49). Hyland makes a distinction between stance and engagement features in participant-oriented bundles. Stance bundles “convey the writer’s attitudes and evaluations” regarding discourse (Hyland, 2008b, p. 49) (15, 16). These bundles concern “the ways writers explicitly intrude into the discourse to convey epistemic and affective judgements, evaluations and degrees of commitment to what they say” (Hyland, 2008a, p. 18). There were 14 bundles of this type in English review articles. These include *the fact that the*, *that there is a*, *that there is no*, *to the fact that*, *can be used to*, *it is possible to*, *by the fact that*, *it is not clear*, *it is clear that*, *from the fact that*, *play a role in*, *I would like to*, *has to do with*, and *the question of whether*. Among these, *the fact that the* was the most frequently occurring expression which is congruent with the results of previous research (e.g., Biber & Barbieri, 2007; Cortes, 2013; Esfandiari & Barbary, 2017; Qin, 2014). Some of the stance bundles were part of an anticipatory-*it* structure, which is interesting as they express stance but in a way that hides authorial interpretations; some contained clausal fragments (Biber et al., 2004); and some included the word *fact* which is referred to as shell nouns (Aktas & Cortes, 2008; Schmid, 2000, as cited in Cortes, 2013, p. 40). Shell nouns are abstract nouns with little or no meaning in themselves, especially when used in academic discourse. Their meaning should be found in the surrounding discourse. Using shell nouns in stance expressions indicates the writer’s intention to foreground his/her evaluation and claim.

(15) These included *the fact that the* ELT field has historically relied on ... (AL-48)

(16) *It is not clear* what the optimal size is ... (L-93)

Engagement bundles are used to address the readers directly in discourse (17, 18). Engagement bundles deal with “the ways writers intervene to actively address readers as participants in the unfolding discourse” (Hyland, 2008a, p. 18). There were three engagement bundles in English review articles, including *it is important to*, *it should be noted*, and *can be seen as*. Among them, *it is important to* was twice as frequent as others. This bundle was also found in other studies (e.g., Cortes, 2013; Qin, 2014). Most engagement bundles were part of an anticipatory-*it* construction. More importantly, although engagement bundles were used to address readers of articles, none of them included second-person mentions through the use of subjects or imperative structures.

(17) *It should be noted* that studies measuring ICC ... (AL-35)

(18) *It is important to* bear in mind that the latter study ... (AL-22)

Participant-oriented expressions are also studied in the literature under the name of metadiscourse and stance expressions. Metadiscourse expressions are “the interpersonal resources used to organize a discourse or the writer’s stance toward either its content or the reader” (Hyland, 2000, as cited in [Tse & Hyland, 2006](#), p. 768). Stance expressions are “the lexical and grammatical expression of attitudes, feelings, judgments, or commitment concerning the propositional content of a message” ([Biber & Finegan, 1989, p. 93](#)). Table 5 presents the results of the functional analysis of text-oriented bundles in English review articles.

Table 5: Functions of Participant-Oriented Lexical Bundles in English Review Articles

Function	No. of different bundles	Freq.	%
Stance features	14	2300	84.50
Engagement features	3	422	15.50
Total	17	2722	100

As Table 5 shows, about 85% of participant-oriented bundles in English review articles were related to stance features, lending support to Hyland’s (2008a) finding for social science texts, and Hyland’s (2008b) observation for research articles, and contrary to his findings for student’s genres, namely, master’s theses and PhD dissertations. Hyland (2008a) found most of engagement bundles used in the hard science texts. Moreover, Hyland (2008b) found most participant-oriented bundles in research articles to indicate the writer’s stance than to engage the reader. According to Hyland (2008b), when presenting their observations, interpretations, and claims, writers also project an appropriate disciplinary persona, annotating their texts to comment on the possible accuracy or credibility of a claim, the extent they want to commit themselves to it or the attitude they want to convey (p. 58).

Hyland (2008a) considers the highly frequent use of engagement bundles in the hard science texts as “a reluctance to adopt a more intrusive personal voice through stance options” (p. 19). Nevertheless, the low proportion of engagement features in English review articles and the fact that such expressions largely constituted anticipatory-*it* constructions, points to the fact that writers of such articles are reluctant to explicitly show commitment to their evaluations and interpretations. This may be considered as an attempt “to protect the writer from possible false interpretations and indicate the degree of confidence that it may be prudent to attribute to the accompanying statement” (Hyland, 2008a, p. 18). The scarcity of engagement bundles is also contrary to Zare and Keivanloo-Shahrestanaki (2017) observation for importance markers in English academic lectures. Zare and Keivanloo-Shahrestanaki found audience engagement importance markers (e.g., *bear in mind*, *remember*, and *for your attention*) or markers “that draw the attention of audience to the important information of lectures” through certain interactive verbs or verbal expressions more frequent than subject status markers dealing with the lecturer’s evaluation and attitude towards discourse (e.g., *more importantly*, and *the important thing*) or “expressions that explicitly evaluate the importance or relevance of information, using evaluative adverbs and adjectives” in English academic lectures (p. 44, 46). While Zare and Keivanloo-Shahrestanaki related this to the presence of an active audience in lectures whose attention and understanding of information is important, the less varied and frequent

use of engagement than stance bundles does not indicate that interaction or interactivity is not important in articles (Crawford Camiciottoli, 2003). As Hyland (2008b) notes, “although often characterized as lacking explicit appraisal and attitude, published academic writing is nevertheless clearly structured to evoke affinity and engagement” (p. 57). Article writers may augment their interaction with their audience using personal pronouns, discourse organizational expressions, etc. (e.g., *note that, the first point we need to make*).

3.2. Structural Analysis of Bundles

Table 6: Structural Analysis of Lexical Bundles in English Review Articles

Main category	No. of different bundles	Freq.	%
Phrasal	85	14317	86.63
Clausal	11	1757	10.64
Others	2	451	2.73
Total	98	16525	100

As Table 6 shows, lexical bundles took different forms in English linguistics and applied linguistics review articles, including phrasal, clausal and other forms. This is in line with the findings of previous research (e.g., Biber et al., 1999; Cortes, 2013; Pan et al., 2016; Qin, 2014). Among these forms, phrasal bundles dominated the corpus, both in terms of variety and frequency, congruent with the findings of prior studies (e.g., Biber et al., 1999; Esfandiari & Barbary, 2017; Qin, 2014). The dominance of phrasal bundles may be associated with the highly informational focus of English linguistics and applied linguistics review articles as soft disciplines. As Pan et al. (2016) point out, “careful integration of information in academic prose requires the use of noun phrases and prepositional phrases, which leads to a shift from clausal style to phrasal style in academic prose” (p. 65). Clausal bundles, on the other hand, were not varied and frequent which lends support to the findings of Biber et al. (1999) and Biber et al. (2004).

The ‘others’ category of bundles included the comparative expressions *as well as the* and *as well as in* which were both transitional expressions, used to established additive links in discourse (19, 20).

(19) the limitations of language tests, *as well as the* best L1 language use domains ... (AL-9)

(20) differ in terms of their vowel systems *as well as in* the phonetic realizations ... (AL-240)

Table 7: Sub-Categories of Phrasal Bundles in English Review Articles

Sub-category		No. of different bundles	Freq.	%
NP-based	NP with of-phrase fragment	21	3095	21.61
	NP (with other post modifier fragment)	8	1028	7.19
VP-based	Passive verb + to-clause fragment	1	176	1.22
	Copula be + NP	2	243	1.70
	VP/ passive verb + PP fragment	6	610	4.27
	pronoun/ NP + be	1	99	0.70
PP-based	PP with embedded of-phrase fragment	18	4030	28.14
	Other PP fragment	28	5036	35.17
Total		85	14317	100

As Table 7 shows, most of the phrasal bundles were prepositional phrases, followed by noun phrase bundles; and verb phrase bundles were used the least. This mirrors the results of Hyland (2008a, b) and Biber et al. (1999). Moreover, this is in keeping with the fact that text and participant-oriented bundles were the first and second most frequent bundles in English review articles; text-oriented bundles largely contained prepositional phrases; and participant-oriented bundles consisted of noun

phrases mostly (Hyland, 2008a; Pan et al., 2016). In addition, most prepositional phrase bundles were part of an embedded *of*-phrase (e.g., *in the absence of*); most noun phrase bundles were part of an *of*-phrase (e.g., *the nature of the*). These results lend support to the findings of previous studies (e.g., Biber & Barbieri, 2007; Cortes, 2002, 2004; Esfandiari & Barbary, 2017; Hyland, 2008b; Jalali & Zarei, 2016; Qin, 2014). It is also in line with Hyland (2008a) who found social science research articles to use a large number of bundles beginning with a prepositional phrase, especially an embedded *of*-phrase. Such bundles are typically associated with indicating logical or textual connections between prepositional elements (Hyland, 2008a).

Some of the prepositional phrase bundles, including *in the case of*, *on the basis of*, *in the context of*, and *in terms of the* were among the top 10 most frequent bundles which mirror the results of Hyland (2008a, b). Hyland found almost half of all the cases of these structures in research articles where they were used to determine size and quantities of elements or to highlight a feature of research or discourse context. In this research, however, most of these prepositional phrases were framing bundles, used for situating arguments. This is in keeping with “the emphasis of the soft knowledge fields on the discursive exploration of possibilities and limiting conditions, identifying and elaborating relationships in argument” (Hyland, 2008a, p. 11).

Among verb phrase bundles, those including passive structures were most varied and frequent, in keeping with Biber et al.’s (1999) observation that most of verb phrase bundles consist of a passive construction, followed by a prepositional phrase, used to mark a locative or logical relation, to signify graphical information, and in some cases to highlight an observation (Hyland, 2008b). In this study, such expressions included *can be seen in/as*, *can be found in*, *is based on the*, and *can be used to*, which were typically followed by either a prepositional phrase or *to*-clause fragment. The bundles *can be seen/found in* (13) were used to structure discourse. As in Hyland’s (2008a) study, the two bundles *is based on the* (21) and *can be used to* (22) were used to base the argument on a following notion. The bundle *can be seen as* also functions the same (23).

(21) The inference engine *is based on the* idea that every possible grammar ... (L-80)

(22) Naturally, many of the alternating verbs *can be used to* denote ... (L-194)

(23) Thus, while motivation *can be seen as* a primarily psychological construct ... (AL-45)

Overall, as Table 7 shows, bundles featuring passive constructions were not varied and frequent. This was because the corpus of this study only comprised linguistics and applied linguistics fields that are considered soft disciplines and writers of articles in these disciplines make use of very few such bundles (Hyland, 2008a). In contrast, many of the most frequent bundles featuring passive constructions are used to identify tabular or graphic display of data in the hard sciences texts with no counterparts in applied linguistics articles (Hyland, 2008a). Table 8 presents different types of clausal bundles found in English review articles.

Table 8: Sub-Categories of Clausal Bundles in English Review Articles

Function	No. of different bundles	Freq.	%
that-clause fragment	3	570	32.45
to-clause fragment	2	331	18.83
Anticipatory it +VP/ Adj P (+that-clause)	5	749	42.62
1 st person pronoun + dependent clause fragment	1	107	6.10
Total	11	1757	100

As Table 8 shows, bundles beginning with anticipatory-it constructions, including *it is important to*, *it is possible to*, *it is not clear*, *it is clear that*, and *it should be noted*, were the most varied and frequent clausal bundles, lending support to the findings of Jalali and Zarei (2016). Hyland (2008a) sees these bundles as a way to hide the authorial interpretations or judgements of the writer (24). “These bundles introduce extraposed structures and function to foreground the writer’s evaluation without explicitly identifying its source” (p. 11). Some of these expressions (e.g., *it should be noted*, *it is important to*)

are the same as what Zare and Keivanloo-Shahrestanaki (2017) refers to as audience engagement and subject status markers of importance.

(24) that it is possible to know a little about a larger number of words or (AL-50)

4. Conclusion and Implications

The purpose of this study was to identify and investigate bundles in English linguistics and applied linguistics review articles structurally and functionally in order to characterize this highly important yet neglected written academic genre. The study was limited in several ways. First and foremost, bundles were determined only based on length, frequency, and dispersion cut-offs. Calculating MI score which assesses “the degree to which the words in a phrase occur together more often than would be expected by chance” is also useful (Ellis, Simpson-Vlach, & Maynard, 2008, p. 380). Second, the functional analysis of lexical bundles is subjective and might lead to inconclusive results, though we did the analysis independently, invited a third researcher, and calculated reliability measures. Nonetheless, some observations are worth noting.

First, the dominance of text-oriented and phrasal bundles, especially framing signals and prepositional phrases, implies the highly informational nature of English review articles in soft disciplines such as linguistics and applied linguistics and as such the importance of organizational features of discourse in articles as a sophisticated persuasive norm developing genre. Second, the low proportion of participant-oriented bundles and resultative signals indicates the writer’s avoidance to explicitly make claims and interpretations in English review articles. Using these expressions sparingly, the writer of the review article creates a discursive space where the reader is free to make his own interpretation or judgement. Third, the varied and frequent use of the anticipatory-*it* structure among clausal bundles, the low proportion of the engagement bundles, and the fact that this dialogic feature of article writing was mostly conveyed through an impersonal construction, i.e. the anticipatory-*it* structure, point to the writer’s reluctance to explicitly show commitment to his/her own evaluations. Fourth, expressing stance through anticipatory-*it* constructions and shell nouns indicates the writer’s intention to either hide or foreground authorial observations, interpretations, and claims.

Overall, the study indicated that writers of English review articles draw on linguistic resources, different from those of other genres, to serve important discourse functions, compatible with the kind of argument they need to develop, based on the particularities of the genre within which they are working. Like other EAP studies, the findings of this study may find practical application in the instructional materials and courses, designed for published article writing. Future studies need to study lexical bundles in review articles across other disciplinary fields.

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References

- [Allen, D. \(2010\). Lexical bundles in learner writing: An analysis of formulaic language in the ALESS learner corpus. *Komaba Journal of English Education*, 1, 105-127.](#)
- [Biber, D. \(2006\). *University language: A corpus based study of spoken and written registers*. Amsterdam, the Netherlands: John Benjamins.](#)
- [Biber, D., & Barbieri, F. \(2007\). Lexical bundles in university spoken and written registers. *English for Specific Purposes*, 26, 263-286.](#)
- [Biber, D., & Conrad, S., \(1999\). Lexical bundles in conversation and academic prose. In H. Hasselgard, & S. Oksefjell, \(Eds.\), *Out of corpora: Studies in honor of Stig Johansson*, \(pp.181–189\). Amsterdam: Rodopi.](#)
- [Biber, D., Conrad, S. & Cortes, V. \(2004\). If you look at ...: Lexical bundles in university teaching and textbooks. *Applied Linguistics*, 25, 371– 405.](#)
- [Biber, D., & Finegan, E. \(1989\). Styles of stance in English: Lexical and grammatical marking of evidentiality and affect. *Text*, 9, 93-124.](#)
- [Biber, D., Johansson, S., Leech, G., Conrad S., & Finegan, E. \(1999\). *Longman grammar of spoken and written English*. Harlow: Pearson.](#)
- [Callahan, J. L. \(2010\). Constructing a manuscript: Distinguishing integrative literature reviews and conceptual and theory articles. *Human Resource Development Review*, 9, 300-304.](#)
- [Chen, Y., & Baker, P. \(2010\). Lexical bundles in L1 and L2 academic writing. *Language Learning and Technology*, 14, 230-249.](#)
- [Conklin, K., & Schmitt, N. \(2008\). Formulaic sequences: Are they processed more quickly than nonformulaic language by native and nonnative speakers? *Applied Linguistics*, 29\(1\), 72-89.](#)
- [Conklin, K., & Schmitt, N. \(2012\). The processing of formulaic language. *Annual Review of Applied Linguistics*, 32, 45-61.](#)
- [Conrad, S. M., & Biber, D. \(2005\). The frequency and use of lexical bundles in conversation and academic prose. *Lexicographica*, 56-71.](#)
- [Cortes, V. \(2002\). Lexical bundles in academic writing in history and biology. Unpublished doctoral dissertation. Northern Arizona University. Flagstaff, Arizona.](#)
- [Cortes, V. \(2004\). Lexical bundles in published and students disciplinary writing: Examples from history and biology. *English for Specific Purposes*, 23\(4\), 397-423.](#)
- [Cortes, V. \(2013\). The purpose of this study is to: Connecting lexical bundles and moves in research article introductions. *Journal of English for Academic Purposes*, 12\(1\), 33-43.](#)
- [Cortes, V. \(2015\). Situating lexical bundles in the formulaic language spectrum: Origins and functional analysis development. In V. Cortes, & E. Csomay \(Eds.\), *Corpus-based research in applied linguistics: Studies in honor of Douglas Biber* \(pp. 197-216\). Amsterdam: John Benjamins.](#)
- [Coxhead, A., & Byrd, P. \(2007\). Preparing writing teachers to teach the vocabulary and grammar of academic prose. *Journal of Second Language Writing*, 16, 129-47.](#)

- [Crawford Camiciottoli, B. \(2003\). Meta-discourse and ESP reading comprehension: An exploratory study. *Reading in a Foreign Language*, 15\(1\), 28-40.](#)
- [Dochy, F. \(2006\). A guide for writing scholarly articles or reviews for the Educational Research Review. *Educational Research Review*, 4\(1-2\), 1-21.](#)
- [Ellis, N. C. \(2002a\). Frequency effects in language processing: A review with implications for theories of implicit and explicit language acquisition. *Studies in Second Language Acquisition*, 24, 143-188.](#)
- [Ellis, N. C. \(2002b\). Reflections on frequency effects in language acquisition: A response to commentaries. *Studies in Second Language Acquisition*, 24, 297-339.](#)
- [Ellis, N. C., Simpson-Vlach, R., & Maynard, C. \(2008\). Formulaic language in native and second-language speakers: Psycholinguistics, corpus linguistics, and TESOL. *TESOL Quarterly*, 42\(3\), 375-396.](#)
- [Esfandiari, R., & Barbary, F. \(2017\). A contrastive corpus-driven study of lexical bundles between English writers and Persian writers in psychology research articles. *Journal of English for Academic Purposes*, 29, 21-42. doi:10.1016/j.jeap.2017.09.002](#)
- [Gasparyan, A. Y. \(2010\). Thoughts on impact factors and editing of medical journals. *Inflamm Allergy Drug Targets*, 9, 2-5.](#)
- [Gasparyan, A. Y., Ayvazyan, L., Blackmore, H., & Kitas, G. D. \(2011\). Writing a narrative biomedical review: considerations for authors, peer reviewers, and editors. *Rheumatology International*, 31, 1409-1417.](#)
- [Granger, S., & Meunier, F. \(Eds.\). \(2008\). *Phraseology: An interdisciplinary perspective*. Amsterdam: John Benjamins.](#)
- [Güngör, F. & Uysal, H. H. \(2016\). A comparative analysis of lexical bundles used by native and non-native scholars. *English Language Teaching*, 9 \(6\), 176-188.](#)
- [Hagger, M. S. \(2012\). What makes a 'good' review article? Some reflections and recommendations. *Health Psychology Review*, 6\(2\), 141-146.](#)
- [Halliday, M.A.K. \(1994\). *Functions of language*. 2nd ed. London: Arnold.](#)
- [Hyland, K. \(2008a\). As can be seen: Lexical bundles and disciplinary variation. *English for Specific Purposes*, 27, 4-21.](#)
- [Hyland, K. \(2008b\). Academic clusters: text patterning in published and postgraduate writing. *International Journal of Applied Linguistics*, 18, 41-62.](#)
- [Hyland, K. \(2012\). Bundles in academic discourse. *Annual Review of Applied Linguistics*, 32, 150-169.](#)
- [Jalali, H. & Zarei, G. \(2016\). Academic writing revisited: A phraseological analysis of applied linguistics high-stake genres from the perspective of lexical bundles. *The Journal of Teaching Language Skills*, 7 \(4\), 87-114.](#)
- [Li, J., & Schmitt, N. \(2009\). The acquisition of lexical phrases in academic writing: A longitudinal case study. *Journal of Second Language Writing*, 18\(2\), 85-102.](#)
- [Mayer, P. \(2009\). Guidelines for writing a Review Article. *Zurich-Basel Plant Science Center*. \[http://www.plantscience.ethz.ch/education/Masters/courses/Scientific_Writing\]\(http://www.plantscience.ethz.ch/education/Masters/courses/Scientific_Writing\).](#)

- [Nattinger, J., & DeCarrico, J. \(1992\). *Lexical phrases and language teaching*. Oxford: Oxford University Press.](#)
- [Nesselhauf, N. \(2004\). Learner corpora and their potential for language teaching. In J. Sinclair \(Ed.\), *How to use corpora in language teaching* \(pp. 125-152\). Amsterdam & Philadelphia: Benjamins.](#)
- [Noguchi, J. \(2007\). The science review article: An opportune genre in the construction of science. *TESL EJ*, 11\(1\), retrieved from <http://www.tesolj.org/wordpress/issues/volume11/ej41/ej41r6/>](#)
- [Pan, F., Reppen, R. & Biber, D. \(2016\). Comparing patterns of L1 versus L2 English academic professionals: Lexical bundles in Telecommunications research journals. *Journal of English for Academic Purposes*, 21, 60-17.](#)
- [Petticrew, M., & Roberts H. \(2006\). *Systematic reviews in the social sciences: A practical guide*. Malden, MA: Blackwell Publishing.](#)
- [Qin, J. \(2014\). Use of formulaic bundles by non-native English graduate writers and published authors in applied linguistics. *System*, 42\(1\), 220-231.](#)
- [Ruan, Z. \(2016\). Lexical bundles in Chinese undergraduate academic writing at an English medium university. *RELC Journal*. 1-14. DOI: 10.1177/0033688216631218](#)
- [Ruiying, Y., & Allison, D. \(2003\). Research articles in applied linguistics: Moving from results to conclusions. *English for Specific Purposes*, 22 \(4\), 365-385.](#)
- [Scott, M. \(2017\). *Wordsmith tools manual*. Version 7.0. Lexical analysis software Ltd. Stroud, Gloucestershire, UK.](#)
- [Sinclair, J. \(2004\). *Trust the text: Language, corpus and discourse*. London: Routledge.](#)
- [Swales, J. M. \(1990\). *Genre analysis: English in academic and research settings*. Cambridge, UK: Cambridge University Press.](#)
- [Tognini-Bonelli, E. \(2001\). *Corpus linguistics at work*. Amsterdam/Philadelphia: John Benjamins.](#)
- [Tse, P., & Hyland, K. \(2006\). ‘So what is the problem this book addresses?’: Interactions in academic book reviews. *Text and Talk*, 27, 767-790.](#)
- [Van Bonn, S., Swales, J. M. \(2007\). English and French journal abstracts in the language sciences: Three exploratory studies. *Journal of English for Academic Purposes*, 6\(2\), 93-108. <http://dx.doi.org/10.1016/j.jeap.2007.04.001>](#)
- [Virgo, J. A. \(1971\). The review article: Its characteristics and problems. *The Library Quarterly*, 41\(4\), 275-291. <http://www.jstor.org/stable/4306110> .](#)
- [Wray, A. \(2002\). *Formulaic language and the lexicon*. Cambridge: Cambridge University Press.](#)
- [Wray, A., & Perkins, R. M. \(2000\). The functions of formulaic language: An integrated model. *Language and Communication*, 20, 1-28.](#)
- [Webster, J., & Watson, R. T. \(2002\). Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, 26\(2\), xiii-xxiii.](#)
- [Zare, J., & Keivanloo-Shahrestanaki, Z. \(2017\). The language of English academic lectures: The case of field of study in highlighting importance. *Lingua*, 193, 36-50.](#)