ANALIZING FREQUENCY, STRUCTURE, AND FUNCTION OF LEXICAL BUNDLES IN COVID-19 ARTICLES BY USING ANT CONC APPLICATION

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Abstrak

It is crucial to recognize that extended fixed collocations are a significant part of fluent discourse production and comprehension and are a crucial part of the shared knowledge of a professional discourse community when approaching the study of extended fixed collocations in academic discourse from a pedagogical perspective. The purpose of this study is to understand the phenomena of lexical bundles, that can be found in a variety of discourses or particular articles. Using the Windows Ant Conc 3.5.8 tool, this journal examines 204 texts relative to Covid-19 that total 935290 words and 26232 different word categories. Lexical bundles are examined in terms of their frequency, composition, and purpose. The study found that lexical bundles in articles have different qualities. They consist of discourse function, frequency, and structure. Apart from verb phrase components or noun phrase parts, other expression bundles and prepositional bundles are used most often in the article.

Keywords: *Lexical Bundles; Covid-19 Discourse; Frequency; Structure; Function*

Abstrak

Sangat penting untuk mengakui bahwa kolokasi tetap yang diperluas adalah bagian penting dari produksi dan pemahaman wacana yang lancar dan merupakan bagian penting dari pengetahuan bersama komunitas wacana profesional ketika mendekati studi tentang kolokasi tetap yang diperluas dalam wacana akademik dari perspektif pedagogis. Tujuan dari penelitian ini adalah untuk memahami fenomena bundel leksikal yang dapat ditemukan dalam berbagai wacana atau artikel tertentu. Menggunakan alat Windows Ant Conc 3.5.8, jurnal ini meneliti 204 teks relatif terhadap Covid-19 dengan total 935290 kata dan 26232 kategori kata yang berbeda. Bundel leksikal diperiksa dalam hal frekuensi, komposisi, dan tujuannya. Studi ini menemukan bahwa bundel leksikal dalam artikel memiliki kualitas yang berbeda. Mereka terdiri dari fungsi wacana, frekuensi, dan struktur. Terlepas dari komponen frase kata kerja atau bagian frase kata benda, kumpulan ekspresi dan kumpulan preposisi lainnya paling sering digunakan dalam artikel.

Kata kunci: Bundel Leksikal; Wacana Covid-19; Frekuensi; Struktur; Fungsi

INTRODUCTION

Academic speech varies from other forms of speech in that there are many layers of a broad vocabulary and a large number of conventional words, which are sometimes referred to as "lexical phrases" (Moon 1992), "fixed expressions", "formula sequences", and "formula expressions". " (Simpson 2004). Nattinger, 1988. N-grams, multiword lexical units, or lexical bundles (Cheng et al., 2009; Cowie, 1992) are examples of lexical bundles (Cowie, 1992). For example, Biber et al. (1999), Cortes (2002), and Hyland (2008).

From a pedagogical point of view, it is important to note that long fixed collocations in academic discourse are an important area of fluent discourse production and comprehension, and also of importance of shared knowledge within professional discourse communities. Therefore, learning the jargon used in the target discourse community is an important component of the communication skills needed by students who are academically knowledgeable (cf. Cortes 2004: 398). Furthermore, "[lexical] bundles serve as a key concept for differentiating written texts by region and also become important for the creation of academic discourse," according to Hyland (2008).

Bieber et al. used the phrase "lexical set" in their 1996 book Longman Grammar of Spoken and Written English. They compare how it is implemented in casual and formal literary works. Repeated sequences of three or more words are referred to as lexical bundles by Biber et al., regardless of their idiomaticity or structural status (1999, p. 990). Simply put, a lexical bundle is a group of tenses that often appear together in speech. The frequency-based approach is used to reveal bundles. this explains that there are frequency thresholds and ranges in the text. The frequency threshold indicates that the lexical bundles did not arise by chance, but the threshold indicates that they are not a consequence of a speaker's or writer's typical usage. Biber and Barbieri (2007), Conrad and Biber (2004), Cortes (2004), and Hyland (2004) all have lexical sets characterized in terms of both structural and functional features (2004). (2008). Only 15% of lexical collections in communication can be understood as phrases or whole sentences, compared to less than 5% in academic writing (Conrad & Biber, 2004). (Cortes, 2004).

The term "lexical set" was first applied in the Longman Grammar of Spoken and Written English (Biber et al. 1999), denoting it as "repeated phrases, regardless of their idiomaticity and structural status" (990). Finally, a collection of three or more words that are repeated most often in a register or genre is used to describe it (Biber and Barbieri 2007: 264).

According to Biber and Barbieri, lexical bundles differ from other types of formulaic statements in a number of ways, including their widespread use, lack of perceptual significance, and lack of idiomatic meaning (2007:269). They usually link structural units as well, starting at a clause/border and ending with the first words of the following stru.

Despite small discrepancies in the structural types of lexical bundles employed in previous studies (e.g., Biber (2006), Biber and Barbieri (2007), and Hyland), it is possible to conclude that there are four basic bundle groups (2008).

1. It is thought that, it is feasible, and may be seen as verb phrase components, which can contain passive voice, anticipatory it structures, and dependent clause fragments.
2. The end of the, the extent to which, or a function of the noun phrase, followed by a piece of a modifier, usually an of-prepositional word.
3. Prepositional phrases that are followed by prepositions or clauses, such as the items that
4. Additional, often lengthier clausal structures that are regularly used as politeness formulas, such as the phrases thank you very much, how are you?, and what are you doing? (Biber 2004: 153) enjoy your day
5. The three kinds of bundles listed below are included in this study's functional categorization of lexical bundles, which is further broken down into a number of subcategories:

Referential bundles (which largely overlap with referential expressions in Biber and Barbieri's (2007) classification and research oriented bundles in Hyland's (2008)) express ideational meanings related to the representation of reality:

      a. Attribute bundles (descriping method, amount, or description of reality) - a little amount of, the application of, and the structure of the
      b. Time/place/text-deixis bundles - at the conclusion and commencement of the
      c. Topic-specific bundles - the interpretation of their curriculum

6. Discourse organizers provide textual meanings relating to the structuring of a text and the advancement of an argument. The phrase is taken from Biber and Barbieri (2007) and corresponds to text-oriented bundles in Hyland's (2008) list.
    a. Logical relations bundles
      – Bundles (addition/contrast) resultative signals – on the other hand, in addition to, in contrast to intratextual
      – Reference bundles
    b. (organizing smaller and larger stretches of discourse) – in the present study, in the next section, as shown in Figure
    c. Framing bundles (focusing, limiting conditions on arguments) – in the case of, with regard to, in light of framing

3. Attitudinal bundles (corresponding to Biber and Barbieri's (2007) stance expressions and to Hyland's (2008) participant-oriented features) communicate interpersonal meanings, such as:
    a. Stance bundles (express the evaluations and attitudes of the writer) – the fact that the, it is possible to, are more likely to
    b. Interactional bundles (address readers and involve them in the argumentation) – it should be noted that, as can be seen.

Furthermore, almost majority of the bundles do not connect two structural components and are not idiomatic. In academic writing, lexical bundles often feature a preposition + a noun phrase fragment (e.g., in terms of the, at the conclusion of the), a nominal phrase + a phrase-of fragment

(e.g., the structure of the, the basis of the), or a component of an anticipatory it (e.g., it is possible to, it should be noted that). The goal is to find lexical bundle occurrences in a corpus of lectures or specialty publications. Using the Windows Ant Conc 3.5.8 application, this journal examines 204 texts connected with Covid-19, totaling 935290 words and 26232 different word categories.

METHOD

A multidisciplinary strategy was adopted in the present investigation (Cheng. 2012). The author investigates lexical bundles of three to six words using the ant conc 3.5.8 program. Before commencing the corpus analysis, the author selected the lexical bundles of interest. Using historical research, notably that of O.D. Novratilova, one may concentrate on certain fiber groupings (2012). This study explores four lexical bundles that are often employed in conversation, in agreement with the stated lexical bundle goals. Prepositional phrases (11 bundles) and noun phrases (7 bundles) are the most prevalent bundle types in terms of bundle structure, whereas referential and discourse-organizing bundles (11 and 10 bundles, respectively) are the most common bundle types in terms of bundle functionality (6 bundles).

This study's corpus consisted of 204 Covid-19-related articles acquired from the internet. The following 2020 and 2020 news stories were chosen randomly. The article's pdf source has been translated to text and organized into a single folder, enabling the Ant Conc software to do its analysis more rapidly and efficiently. The word clusters under examination are organized around certain lexical objectives. This research focuses on four distinct bundles that have been categorised according to their intended use. Lexical bundles are lengthy collocations that appear more often than predicted. They must maintain the written language cohesive. They assist the reader or listener in recognizing the speaker's tone and diction, as well as the significance of the words used in a particular context. The corpus was built from 204 articles on the CoV-19 outbreak. Because an average article has 4,500 words, the corpus being used study had 935,290 words.

To begin answering this topic, a frequency analysis of the lexical bundles published in the journal was carried out. The structure was then investigated. Biber et al. (1999) designed a categorization approach that classifies lexical bundles into a variety of key structural kinds in addition to illustrating how grammatically related they are. The lexical bundles were then classified according to their discourse functions using functional analysis. To be more specific, the categorization used (Hyland, 2008). (2014) (Salazar). The researchers distinguish their word choices into three categories: participant-oriented, text-oriented, and research-based. The author utilized Ant Conc 3.5.8 to determine the semantic classes of lexical sets. The outcomes will be addressed in the next section.

DISCUSSION AND RESULTS

Thirty 4-word clusters (target bundles) were chosen to reflect the most prevalent clusters used in humanities-related academic discourse. Table 1 categorizes target bundles based on structure and

purpose. Because it is based mostly on frequency, the selection does not accurately represent the numerous various lexical bundle types in terms of structure and function.

The total number of lexical bundles, broken down by category and purpose, was determined using the Ant Conc program after analysis.

Target Bundles	Total
Verb Phrase components	
That led to the	4
Is due to the	2
It is important to	71
It is possible that	7
Should be noted that	13
Can be found in	18
Referential total No.	**115**
Average	**19.17**
Noun Phrase elements	
The extend to which	10
The end of the	14
One of the most	16
The relationship between the	5
The structure of the	
The result of the	6
The fact that the	4
	2
Disc. Organizers total No.	**57**
Average	**8.14**
Prepositional Phrase Structures	
At the same time	
At the end of	26
At the beginning of	28
In the form of	14
In the context of	11
On the basis of	54
On the one hand	18
On the other hand	4
And on the other	39
In the present study	2
In the case of	14

	56
Attitudinal total No.	**249**
Average	**22,64**
Other Expressions As well as a/the As a result of I would like to	51 33 2
Attitudinal total No.	**86**
Average	**28,67**

The raw frequency of occurrence of target bundles in the research material is presented in the table above according to their kind. The following are examples of extra expression bundles that are often used in sample articles. Prepositional bundles are also often used. As can be observed, prepositional bundles are used far more often than verb and noun phrase parts on average.

The Structure of Lexical Bundles

The structure of lexical bundles is one of its properties. Several investigations have shown that lexical bundles often have inadequate structures in written forms. In this corpus of research publications, the bulk of the lexical bundles have incomplete structures as well. The incomplete structure consists of sentences, both free and constrained phrases, that lack specific components, such as an object, complement, or subject-complement concurrently.The following are some examples:

(1) At **the end of the** year 2019, the novel coronavirus (2019-nCoV) was spreading in Wuhan, China, and the outbreak process has a high speed

(2) thus **it is possible that** his recovery is related to the role of self-defense me-chanisms and supportive treatment as well

(3) we should use drugs that on the one hand do not promote DIC **and on the other** do not increase the risk of adverse cardiovascular events, i.e. cangrelor, bivalirudin

(4) But **I would like to** refer to an additional suggested therapy, namely: IVIG. IVIG

In the example above show that (1) it appears that the bundles is fragmented at the adverb slot; in (2) the bundles is fragmented at the object slot; while in (3) and (4) the bundles are fregmented at the verb slot.

The Gramatical Pattern of Lexical Bundles

After knowing the structure. It will be interesting when we also look at the grammatical patterns of the lexical. Based average used of the target bundles, the other expression bundles is most often used in the article than followed by Prepositional phrase structure type, vern phrases component and then noun phrases element. The patterns in detail can be seen below:

1.Verb Phrase Components

The core elements of the bundles are verbs. The verb can be extended by additing other elements after or before the verbs

VP fragment + PP fragment

(5) Phylogenetic research of dromedary camels showed five unique coronavirus lineages, including one recombinant lineage that caused the MERS-CoV outbreak in humans.

(6) The presence of intact virus particles in the air of the patient's rooms or during aerosol-producing medical procedures should be noted.

2. Noun Phrases Elements

The core elements of the bundles are Nouns or noun phrases. The noun phrases can be formed by extending the noun to its right and /or left,

NP (fragments) + PP fragments

(7) The connection between the dynamic of serum antibodies and viral replication is unclear in light of the knowledge that is presently available.

(8) According to Yan et al., the structure of the ACE2-BoAT1 complex was derived from RCSB PDB 6M17.

(9)

3. Prepositional Phrases Structure

The core elements og the bundles are prepositions and noun phrases. The noun phrases that follow the preposition can be in the form of an imcomplete noun phrase or complate noun phrase.

Prep +NP (fragments)

(10) Another method by which an enzyme may bind either the inhibitor or the substrate, but never both at once, is the suggested L-peptide.

(11) The crucial sequence characteristics and the 2019-nCoV cleaved arginine R are nevertheless conserved, despite the pig case displaying extensive change and becoming a PLGDG motif..

4. Other Expression Bundles

Other Expression bundles could be Adjective based bundles or Clause based bundles. Like '**as well as a/the'** and **'as a result of'** are types of Adjective-based bundles. in the advective-base bundles, the core elements of the bundles are adjectives and following by the Prepositional Phrase fragment.

AP+PP fragment

(12) This envelope is made up of three separate proteins: a " membrane protein," a " envelope protein," and a " spike protein," all of which are directly involved in viral formation.

(13) Few examples of children without underlying comorbidities passing away due to COVID 19 have been documented as of the time of this study.While the 'I would like to' bundles is types of Clause-based bundles. the core elements of the clause-based bundles are clauses.

A clauses is a construction that cointains a predicate and a subject with or without object, complement or adverbial.

(13) But **I would like to** refer to an additional suggested therapy, namely: IVIG. IVIG

The Functional Classification of Lexical Bundles

Table 3. Result of Analysis

Target Bundles	Total
Referential LBs	
The extent to which	10
The end of the	14
One of the most	16
The relationship between the	5
The structure of the	
At the same time	6
At the end of	26
At the beginning of	28
In the form of	14
In the context of	11
On the basis of	54
	18
Referential total No.	**202**
Discourse Organizing LBs	
That led to the	4
Is due to the	2
The result of the	4
On the one hand	4
On the other hand	39
And on the other	2
In the present study	14
In the case of	56
As well as a/the	51
As a result of	33
Disc. Organizers total No.	**209**
Attitudinal LBs	
It is important to	71
It is possible that	7
Should be noted that	13
Can be found in	18
The fact that the	2
I would like to	2
Attitudinal total No.	**113**

The classification of the discourse function of lexical bundles used in this study is based on Biber, Conrad, and Cortes (2004), Cortes (2004), Biber and Barbieri (2007), Simpson-Vlach et al. (2010), and Ellis (2010). It addresses the referential, discourse-organizing, and attitude-related

functions of bundles, which convey ideational, textual, and interpersonal meanings, according to Cortes (2004: 401). Halliday Table 3 shows the prevalence of lexical bundles based on functional categorization.

Referential expressions are classified as lexical bundles in the first functional category, which also includes attribute bundles and time/place/text deixis bundles. These terms are often used to describe research techniques, approaches, and goods and locations.

In this research, referential lexical bundles were often used. The example article's usage of the term often demonstrates this. The packets were at the conclusion of, and at the same time, when they would normally have a time-deictic. even if many, The link between the shape, appearance, environment fit, and operation of an item is based on attribute bundles that specify a method, a quantity, or a representation of reality.

Discourse organizers, the second form of lexical bundle that was useful in professional writing, were used to link ideas, build compelling arguments, and lead readers through a work. Table 3 revealed that articles were the most often employed Discourse Orginazing Lexical Bundles.

The largest category of discourse organizers taken into account in the current study is logical relations bundles, which can be used to denote cause-and-effect (that led to, is due to, as a result of, and the results of) relations as well as contrast (on the one hand, on the other hand, on the other) and addition (as well as) relations. Discourse structuring bundles seem to be less common than discourse markers, which Czech students often use, according to earlier research (Povolná 2010a, 2010b, Vogel 2008).

Attitude expressions, the last set of target bundles, give interpersonal meanings by conveying the authors' assessments, level of commitment to their views, and willingness to engage with the reader.

CONCLUSION

The findings revealed that lexical bundles in articles exhibit particular properties. They are made up of three components: discourse structure, frequency, and function. In addition to verb phrase components or noun phrase parts, other expression bundles and prepositional bundles are often used in the article.

Whole and incomplete structures may be identified based on the structural properties of the lexical bundles. Sentences and phrases are used to depict the fragmented structure. Along with incomplete structures, entire structures exist, and they often take the form of phrases.

Prepositional phrases, verbal phrases, and noun phrase components often realize referential time/place/text-deixis as well as discourse-organizing framing bundles, resultative and interactional bundles, and referential attribute bundles, respectively.

REFERENCES

Biber, D. (2006). *University Language: A Corpus Study of Spoken and Written Registers*. John Benjamins.

Biber, D., & Barbieri, F. (2007). 'Lexical bundles in university spoken and written registers.' *English for Specific Purpose*, 26, 263–286.

Biber, D., Stig, Johansson, G. L., Finegan, Conrad, S., & Edward. (1996). *Long¬man Grammar of Spoken and Written English*. Pearson Education Limited.

Cheng, W., Greaves, C., Sinclair, J., & Warren, M. (2009). Uncovering the Extent of the Phraseological Tendency: Towards A Systematic Analysis of Concgrams. *Applied Linguistics*, *30*, 236–252.

Cortes, V. (2004). Lexical bundles in published and student disciplinary writing: Examples from history and biology. *English for Specific Purposes*, *23*, 397–423.

Cowie, A. C. (1992). *Multiword lexical units and communicative language teaching.' In: Arnaud, Pierre J. L. and Henri Bejoint (eds.) Vocabulary and Applied Linguistics*. Mac¬millan.

Halliday, M. A. K. (1985). *An Introduction to Functional Grammar*. Edward Arnold.

Hyland, K. (2008). As Can Be Seen: Lexical Bundles and Disciplinary Variation. *English for Spe¬cific Purposes*, *27*, 4–21.

Simpson-Vlach, Rita, & Ellis, N. C. (2010). An Academic Formulas List: New Methods in Phra¬Seology Research. *Applied Linguistics*, *31*(4), 463–512.

Wray, A. (2000). Formulaic Sequences in Second Language Teaching: Principle and Practice. *Applied Linguistics*, *21*(4), 487–489.