Lexical Bundles and Keywords in Psychology Research Articles

Rika Mutiara

Esa Unggul University, Jakarta

Esa Unggu

Bioprofiles:

Rika Mutiara teaches English for academic and business purposes at Esa Unggul University. Her research interests include corpus linguistics and language acquisition. She can be reached at rika.mutiara@esaunggul.ac.id.

Abstract

Universitas _ Universitas _ Universitas

As two components of discourse, lexical bundles and keywords have prominent roles in discourse. This study aims at investigating discourse functions of lexical bundles, keywords, and the co-occurences of lexical bundles and keywords in psychology research articles. The study of collocations and concordance lines were conducted. It was found that the discourse functions of lexical bundles are attitudinal/modality stance (directive), quantity specification, impersonal stance, and tangible framing attribute. Based on the keywords investigation, the main issues are gender, interaction, theory/hypothesis prediction, social event, nervous system, and individual perception. Co-occurrences of lexical bundles and keywords exist in particular research articles or across several ones.

Keywords: lexical bundle, keyword, discourse, corpus

Introduction

As a study of academic discourse, the current study focuses on discourse in social psychology research articles. Discourse is built by word choices that convey functions of the language. Some words tend to frequently occur together that result in lexical bundles. Lexical bundles are "the most frequent recurring lexical sequences" (Biber and Conrad, 1999, p.168).

Besides lexical bundles, keywords have important roles in discourse. Keywords are words that are more significant in a corpus being studied than in a reference corpus. The results of keywords analysis uncover what topics or issues the writers mostly concern about (Baker, 2004).

Esa Unggul University Arjuna Utara No.9, Kebon Jeruk, Jakarta Ünggul

Esa Unggul

Even though lexical bundles and keywords are two different things, they can be complement to each other in discourse study (Partington in Flowerdew, 2012). They can be the basis to identify moves in the texts. When they co-occur, they carry specific contexts (Thornbury, 2010).

To the best of my knowledge, there has not been a study dealing with lexical bundles and keywords in academic discourse. Therefore, the study sought to answer the following questions:

- 1. a. What four-word lexical bundles do occur?
 - b. What are the discourse functions of the lexical bundles?
- 2. What are the keywords and their collocations?
- 3. What lexical bundles do co-occur with keywords?



Literature Review

Lexical bundles

Lexical bundles are primary elements in discourse construction (Biber and Conrad, 1999). Biber, Conrad, and Cortes (2004) explored discourse functions of lexical bundles in academic register and categorized them as can be seen in the table below.

Table 1: The categorization of discourse functions of lexical bundles by Biber et al. (2004)

| Categorizations | Subcategorizations | Units | | |
|----------------------|---|------------------------|--|--|
| Stance bundles | Epistemic stance | | | |
| | Attitudin <mark>a</mark> l/modality st <mark>a</mark> nce | Desire | | |
| | | Obligation/directive | | |
| | | Intention/prediction | | |
| | | Ability | | |
| Discourse organizers | Topic introduction/focus | | | |
| | Topic elaboration/clarification | | | |
| Referential bundles | Identification/focus | | | |
| | Imprecision | | | |
| | Specification of attributes | Quantity specification | | |
| | Esa U2 ggul | | | |



Time/place/text reference

Tangible framing
Intangible framing
Place reference
Time reference
Text-deixis
Multi-functional reference

Biber and Barbieri (2007) argued that lexical bundles were rarely found in academic texts but they are common in course management and institutional writing. According to Hyland (2008), lexical bundles in biology and electrical engineering texts mainly focus on passing on research results while the ones in applied linguistics and social science are characterized by texts as the center in which the writers built their point of views.

Keywords

The function of keywords to analyze a discourse is as the starting points. Textual approach influences most discourse studies that use keywords (Flowerdew, 2012). Describing patterns by studying collocation of the keywords and semantic preferences becomes essential (Hyland, 2009). It can be used to discover the ideas of the texts.

Methodology

The study is a combination of text and corpus analyses. The study corpus consists of 50 social psychology journal articles written in English and published in 2009-2010. The size is 312,860 words. All sections of the articles except references were included in the corpus.

Four-word lexical bundles were found through running the texts into Antconc. The minimum frequency of the bundles is 20 in at least 16 research articles. They were categorized based on classification developed by Biber et al., (2004) to identify the discourse functions.

To obtain the keywords, the study corpus was run into Lextutor online and compared to the Brown corpus that only consists of written texts. Among the top 100 keywords, only those that have at least 13 occurrences in at least 6 research articles were analyzed. By using Antconc, the collocations of selected keywords were examined to see the topics commonly discussed. The







span of the collocations is 4 words to the left and right. The concordance lines of keywords were scrutinized to see whether the lexical bundles co-occur with the keywords in the sentence level.

Findings and discussion

Lexical bundles

Esa Unggul Esa Unggul

There are five lexical bundles which occur as follows:

Table 2: *The occurrence of lexical bundles*

| Lexical bundles | Frequency | Range | Discourse functions |
|----------------------------|-----------|-------|---|
| participants were asked to | 45 | 22 | attitudinal/modality stance (directive) |
| the extent to which | 75 | 20 | referential bundle (quantity |
| | | | specification) |
| as a function of | 53 | 18 | referential expression (identification) |
| are more likely to | 24 | 16 | stance expression (epistemic |
| | | | stance/impersonal) |
| in the context of | 39 | 16 | referential expressions (tangible |
| | | | framing attributes) |

Esa Unggul

The bundles above are the chunks of language that are commonly used in this register. By using participants were asked to, participants' involvement to do some tasks in this field of research can be seen. It tells a part of research procedure that the participants did. The extent to which shows measurement in the studies. As a function of gives more detailed explanation. Are more likely to shows writers' personal point of view towards the topics. It illustrates writers' certainty. The use of *in the context of* means the writers set up the scope of the studies. It specifically limits the research.

Keywords

The keywords are gender, interact, predict, Olympic, perceive, neural, and psychology. All keywords appear as lemmas. The following is a list of keywords and their collocates.







Table 3: The collocations of keywords

| Keywo <mark>rds</mark> | Collocates | | |
|------------------------|------------------------|-------------|--|
| Gender | Differences | Universitas | |
| | Social | | |
| | Participant(s) | | |
| | Gender | | |
| Interact | Significant | | |
| | Cult <mark>u</mark> re | | |
| | Social | | |
| | Way | | |
| | Effect | | |
| | Main | | |
| Predict | Hypothesis | | |
| | Theory | | |
| Olympic | Games | | |
| | Chinese | | |
| Perceive | Individual | | |
| Neural | Self | Esa Unggul | |
| Psychology | Social | | |
| | Cultural | | |
| | | | |

Some words have patterns in their occurrences. When *gender* collocates with *differences*, some are followed by prepositional phrases that begin with *in. Gender differences* occur in specific contexts as can be seen in the concordance below.

he fact that there are gender differences in religiosity has obvio at there would be no gender differences in the relationship beta We also did not find gender differences in relationships betwee ares, 2008); likewise, gender differences in tentative language v tional factors induce gender differences in language style, the r 2003) argue that \x93 gender differences in language use have e yer. When significant gender differences in sportscaster talk aris

Figure 1: Concordance lines of gender differences







In the collocation of *interaction* and *significant*, some sentences begin with *there was* as can be seen in the following concordance lines.



Figure 2: Concordance lines of significant interaction

The words *perceive* that collocates with *individual* mostly occur in relative clauses as in the following concordance lines.

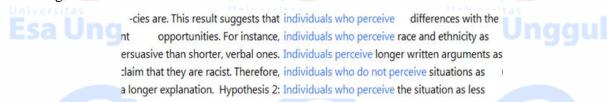


Figure 3: Concordance lines of perceive and individual

When *neural* collocates with *self*, they tend to form compound nouns *self*... as occur in the following concordance lines.

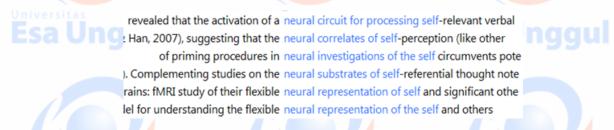


Figure 4: Concordance lines of neural and self

Co-occurrences of lexical bundles and keywords

The co-occurrences exist in the very limited scope, i.e. in a research article or in the larger scope, i.e. in several research articles. Face and the extent to which co-occur seven times in one research article as in ... cultural differences in the extent to which negative and positive face threats would It has been discussed the extend to which reveals measurement. Therefore, the focus of the research is to measure face threats. There are also co-occurences that appear in five articles those are collocations of negative and the extend to which.







Conclusion

The use of lexical bundles has particular functions that show the characteristics of psychology research articles. The analysis of the keywords shed light on the issues mainly discuss in this register. Some lexical bundles co-occur with keywords and the co-occurences reveal how language chunks and single word carry specific meaning that becomes the essence of the discourse.

References

- Anthony, L. (2014). AntConc (Version 3.4.3) [Computer Software]. Tokyo, Japan: Waseda University. Available from http://www.laurenceanthony.net/
- Baker, P. (2004). Querying Keywords: Questions of difference, frequency, and sense in keywords analysis. *Journal of English Linguistics*, 32 (4), 346-359.
- 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., & Barbieri, F. (2007). Lexical bundles in university spoken and written registers. English for Specific Purposes, 26 (3), 263-286.
- Cobb, T. [Keywords Extractor] Acessed on 7th July 2016 at http://http://www.lextutor.ca/key/
- Flowerdew, L. (2012). Corpus-based discourse analysis. In J.P. Gee & M. Handford (Eds.), *The Routledge handbook of discourse analysis* (pp. 174-187). New York: Routledge.
- Hyland, K. (2008). As can be seen: Lexical bundles and disciplinary variation. *English for Specific Purposes*, 27 (1), 4-21.
- Hyland, K. (2009). Academic discourse. London: Continuum.







Thornbury, S. (2010). What can a corpus tell us about discourse? In O'Keeffe, A., & McCarthy, M. (Eds.), *The Routledge handbook of corpus linguistics*. (pp. 270-287). New York: Routledge.

Esa Unggul

Esa Unggul

Esa Unggul























