Corpus-based Research on Tense Analysis and Rhetorical Structure in Journal Article Abstracts

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Abstract

There has long been a growing interest in journal articles (JA) abstract writing, and this pervading interest has boosted the exigency for further instructive research. This current study aims to investigate both the variant application of the verb tense as well as the rhetorical structure within JA abstracts. A 9.9 million word corpus of 1000 JAs was collected based on four prestigious journals, i.e., Journal of Pragmatics, Journal of Research in Reading, Journal of Second Language Writing, and Reading and Writing, respectively. The quantitative analysis indicates the tendency of tense shown in the commonly applied reporting verbs. On the other hand, the qualitative analysis shows the prevailing adoption of three-, four-, and five-move theories in terms of the CARS model, the IMRD structure, and the IPMPrC structure. The results not only reveal the explicit tendency of the variance within reporting verbs but also suggest a distinct pervasiveness of the IMRD structure over the other models. These findings not only present a more systematic pattern within JA abstracts, but also show potentials for enlightening further pedagogy-oriented composition instruction for JA abstract.

1. Introduction

Previous studies have highlighted the indispensable importance of JA abstract in the contemporary flow. The pivotal role of JA abstract has received considerable attention in academic written genre among the international community. Swales (1990) appeals to the academia, claiming that the research in JA abstracts ought not to be ignored inasmuch of its influential significance upon the genre investigation and disciplinary discourse communities.

As the knowledge of proficient preferences for language choice as well as rhetorical structure has a great influence on academic written genre, many investigators have recently turned to the relevant research in relation to genre analysis, thematic organization, formulaic language, rhetorical structure, etc. (Cortes, 2004; Hyland, 2008a; Lorés, 2004; Martin, 2002; Swales, 1990; Wang & Chan, 2011; Wang & Kao, 2012). Furthermore, research in terms of corpora decoding for rhetorical structures such as moves and steps is also regarded as one of the recommendations for further research expansion by Flowerdew (2010).

Taking the contribution of the previous studies, this current research sets out to explore the variation of tense within the reporting verbs among the transitions of moves via the structural analysis in JA abstracts.

2. Literature review

In the respect of genre analysis, move analysis has been always considered to be one of the most influential elements. A move is a rhetorical element which serves the function of correlating and cohering within the written or spoken context (Lorés, 2004; Swales, 2004). However, it is not a definite unit which is constraint to perform in a fixed pattern because it is able to vary along with the context. In other words, move functions as a communicative role between each transition of the rhetorical structure.

A brief elaboration of the most pervasive move theory in terms of three-, four-, and five-moves is described in sequence.

2.1. Three-move theory

Create a Research Space (CARS) model, proposed by Swales (1990), has been widely used by scholars to outshine their publication in this competitive academia (Cheng, 2006). CARS model is divided into three moves,
including establishing a territory, establishing a niche, and occupying the niche (Swales, 1990).

In other words, Move 1: establishing a territory can be commensurate with “goal” and “current capacity,” synthesizing the research aim with the previous research (Swales, 1990, p. 142). As a consequence, Move 2: establishing a niche functions as offering a space for research gap and possible research questions (Swales, 1990). Under this circumstance, Move 3: occupying the niche will provide a “solution of criteria of evaluation” that taps into the intricacies which came up with in Move 2 section (Swales, 1990, p. 142).

2.2. Four-move theory

The most well-known and considerably applied structure in academic writing is the IMRD structure (i.e., Introduction, Methods, Results, and Discussion) (Golebiowski, 2009). It was first proposed by Ventola (1994).

To illustrate the content in depth, the introduction segment would cover the further elaborations of the purpose and objective of the current research. Lorés (2004) additionally comments that any other questions that could possibly bring out further open discussion might also be included in this Introduction segment. When it comes to the second stage – Method, a clarification of the scheme adopted in the research will be described (Lorés, 2004). As the lines progress, the Result segment is expected to offer critical information in relation to the findings from the implement of the research (Lorés, 2004). The final Discussion section is required to contain a further discussion of the findings, an exploration of possible research space and practical application (Lorés, 2004).

2.3. Five-move theory

Differing from the above discussed structures, the five-move theory – IPMPPrC structure, proposed by Hyland (2004), is especially designed to access the RA abstracts. Nevertheless, it is clarified in the first place that the aim of setting this five move structure lies in providing an assertion in relation to JA abstract conducting as well as an inter-textual projection in terms of the significance of each research instead of addressing definite move steps (Hyland, 2004).

In an attempt to provide a clearer framework of the main characteristics of the IPMPPrC structure, Table 1 elaborates the primary functions of each move in the five-move theory (Hyland, 2004, p. 67).

| Move       | Function                                         |
|------------|--------------------------------------------------|
| Introduction | Establishes context of the paper and motivates the study or discussion. |
| Purpose    | Indicates purpose, thesis or hypothesis, outlines the intention behind the paper. |
| Method     | Provides information on design, procedures, assumptions, approach, data, etc. |
| Product    | States main findings or results, the argument, or what was accomplished. |
| Conclusion | Interprets or extends results beyond scope of paper, draws inferences, points to applications or wider implications. |

Table 1: IPMPPrC structure

3. Methodology

In an attempt to shed lights on the various dimensions that are possibly exposed from the academic written genre, a total of 1000 journal articles, which comprises 9,983,482 tokens out of 117,855 types of distinct words, were extracted evenly from four prestigious academic journals: Journal of Pragmatics (JOP), Journal of Research in Reading (JRR), Journal of Second Language Writing (JSLW), and Reading and Writing (R&W).

In accordance with the principle aim of this current research, that is, to specify the variation of verb tense and rhetorical structure in JA abstracts, 1000 abstracts were additionally extracted from the retrieved research materials, and constructed as the primary research corpora. Table 2 compares the tokens and types of the five primary corpora.

| Type of Corpora | No. | Tokens       | Types     |
|-----------------|-----|--------------|-----------|
| JOP abstracts corpus | 250 | 47,074       | 6,068     |
| JRR abstracts corpus | 250 | 39,699       | 4,001     |
| JSWL abstracts corpus | 250 | 45,520       | 4,265     |
| R&W abstracts corpus | 250 | 45,700       | 3,679     |
| 1,000 abstracts corpus | 1,000 | 177,945    | 9,711     |

Table 2: Comparison among research corpora

The data analysis is twofold. On the one hand, the quantitative analysis focuses on the investigation of verb tense, especially set out for reporting verbs, by manipulating the analytical instruments such as MonoConc Pro and WordSmith version 5.0.

On the other hand, the qualitative analysis of consists in the assessment of the rhetorical structure in accordance with CARS model, the
IMRD structure, and the IPMPrC structure. Table 3 below illustrates the comparison of different transitions among the applied theories from three to five moves.

| Three moves | Four moves | Five moves |
|-------------|------------|------------|
| CARS model  | IMRD structure | IPMPrC structure |
| Context     | Introduction | Introduction |
| Gap         | Methods     | Purpose     |
| Present study | Results   | Methods     |
|             | Discussion  | Product     |
|             |             | Conclusion  |

Table 3: Comparison of move theories

4. Results

The current study reports on two dimensions in JA abstracts: verb tense and rhetorical structure. Firstly, the analysis of verb has uncovered a prevailing application of be-verbs, such as is, are, was, were, as well as reporting verbs such as show, examine, suggest, investigate, and find, in applied frequency sequence. It is reasonably assumed that the different application pattern of be-verb contains two possibilities: plain statement as well as passive voice.

Prior to tackling the various findings on the different tense of verbs, a clearer comparison of how be-verb is applied in each of the research corpora is shown in Table 4.

| Form | JOP | JRR | JSLW | R&W | ALL |
|------|-----|-----|------|-----|-----|
| is   | 526 | 200 | 275  | 173 | 1204|
| are  | 329 | 206 | 213  | 153 | 901 |
| was  | 75  | 300 | 134  | 355 | 864 |
| were | 83  | 374 | 243  | 442 | 1142|
| be   | 192 | 110 | 140  | 94  | 536 |
| total| 1,205|1,190|1,005|1,217|4,647|

Table 4: Frequency of be-verbs

As can be seen from Table 4, it is apparent that JOP has its tendency to use present tense whereas JRR and R&W has similar tendency to apply past tense. This finding also reflects on the results obtained from the reporting verbs, as shown in Table 5.

| Form | JOP | JRR | JSLW | R&W | ALL |
|------|-----|-----|------|-----|-----|
| show | 63  | 21  | 32   | 19  | 135 |
| -s   | 22  | 8   | 11   | 2   | 43  |
| -ing | 3   | 6   | 1    | 4   | 14  |

Table 5: Frequency of reporting verbs

It can be seen from the data shown in Table 5 that the each research corpus has its tendency towards the application of tense as stated in the analysis of be-verbs, except for the single peculiar example “find.” When it comes to the reporting verb “find,” it was found that this particular word possesses its consistent tendency of past tense or passive voice in all research corpora. The practical examples of past tense and passive voice extracted from each research corpus are demonstrated below.

- “Finally, the study found that while the majority of the complaints on TripAdvisor can be considered indirect (or third party) complaints, there were nevertheless some examples that blur the direct/indirect dichotomy.” (JOP – past tense)
- “It was found that although the same discourse of legitimation (the Bible) is used in some of the arguments, addressers apply their own experience to their views of this discourse and thus create opposing arguments.” (JOP – passive voice)
- “We found an association between the HLE and ethnicity/SES, indicating that (Dutch) majority children and children from high SES families had, in general, the most stimulating HLEs.” (JRR – past tense)
- “It was found that letter knowledge was specifically related to the development of phoneme segmentation in pre-literate children.” (JRR – passive voice)
Turning to the exploration of the move analysis has revealed a wide application of three-, four-, and five-move theory in JA abstracts. The distribution of the applied rhetorical structure is shown in Table 6.

Table 7 shows that the JA abstract was constructed with (I) the specific research focus, (M) the sampling and participants, (R) main findings, and (D) the derived implications. It can be especially observed from the highlighted boldfaced words in Table 7 that the tendency of past tense as well as the rephrasing verb choice were found out to be reflecting the findings, which indicated the tendency of past tense as well as passive voice applied in JRR corpus, stated in the former sections.

The second example, randomly selected from JSLW corpus (see Table 8), is the IPMPrc structure, which was found out to contain 28.8% of the JA abstracts written in this structural pattern.
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Quantitative analyses indicated that abstracts published in English-medium journals featured markedly more hedges than those published in Chinese-medium journals and that abstracts of empirical research articles used significantly more boosters than those of non-empirical academic articles. Textual analyses further revealed that the distinct patterning of hedges and boosters in Chinese and English abstracts had a joint, interactive effect on the authorial certainty and confidence conveyed therein.

These results are discussed in terms of culturally preferred rhetorical strategies, epistemological beliefs, lack of facility in English as a second/foreign language, and the nature of supporting evidence drawn on for knowledge claims in different types of academic writing.

Table 8: Example of IPMPrC structure

Table 8 presents the transitions of the five-move theory from (I) establishing the context, (P) stating the main purpose, (M) methodology, (Pr) emerged observations, and (C) discussions. Interestingly, the contrary tendency of present tense is also reflected in the randomly selected example, as shown in Table 8.

Turning now to the findings of the three-move structure. It was revealed that only 17.3% of the JA abstracts were written in accordance with the CARS model; however, the minority does not shatter the irreplacable importance that each move theory possesses. The example randomly selected from the JSLW abstract corpus is demonstrated in Table 9.

Move | JA abstract from JSLW corpus
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1 | English as an Additional Language (EAL) students’ textual borrowing in disciplinary writing has attracted wide research interest in recent years.
2 | However, much of the research was conducted in the regular curriculum setting while the relevance of the issue in a writing-for-publication context has largely been overlooked. In particular, disciplinary experts’ perspectives concerning textual borrowing have not been explored in-depth.
3 | The present study fills such a gap in the literature by looking into how an expert writer, a professor of biochemistry in a Chinese university, perceived novices’ textual borrowing in their initial drafts and eliminated such borrowing as he redrafted novice texts for publication. The study revealed that the expert had complete tolerance for his students’ copying and that his elimination of it during redrafting was guided by his genre expertise and rhetorical skills for publishing. The paper also pointed out that the shortage of explicit teaching from the supervisor to his students as well as the lack of active participation of his students in the writing process was bound to the publication pressure in the local institutional context.

Table 9: Example of CARS model

It is clear that the transition of the three-move theory set out from (1) appealing to readers’ attention, (2) indicating the gap, and (3) presenting the current findings. The highlighted boldfaced words imply the impartial selection of tense shown in the JSLW abstract corpus.

5. Concluding remarks

This current research aimed to investigate tense analysis as well as rhetorical structure in JA abstracts. The implemented data analysis has indicated the variant but consistent tendency of verb tense in each discipline. The findings of the verb tense are reflected in the assessment as shown in the transitions of rhetorical structure. It is believed that the variations of verb tense as well as the rhetorical structure are strongly connected and interrelated. Despite the lack of pedagogical experiment design that has led this study to the limitation of not knowing the actual benefit of the research findings for language learners, it is determined that the acquired language use and the structural pattern suggest authentic disciplinary conventions on linguistic productions.

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