The Use of Moves/Units in Abstracts of Medical Articles: A Comparative Case of Medical Articles Written by Persian and English Writers

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Abstract: The authors of the scientific articles, especially medical articles, are expected to write persuasively to attract the readers. They should be able to make a proper bridge between the main purpose of the article and the readers' mind to achieve the purpose. The authors of such articles usually use the structured manner by following a particular rhetorical pattern by the discourse community.

This study aimed at comparing the hierarchy of the moves or units used in the abstracts of medical articles by Persian and English writers. The instruments of the present research consisted of forty medical articles published in accredited medical journals, twenty being written by Native English writers and twenty by Persian authors. The findings of the study showed that two moves or units, i.e. "Results" and "Conclusion" were used by native and non-native authors in all articles. However, the use of the other units such as "Background", "Objectives", and "Materials and Methods" varied from native English writers to non-native English authors.

Keywords: Medical abstracts, Hierarchy, Medical articles, Structural moves/units

1. Introduction

There is a widespread concern about the best choice of rhetorical patterns and rhetorical devices which are suitable in scientific, especially medical articles written in English. A rich, written text, particularly a research paper, demands to be adjusted with the main goal of the writer through a proper model. Appropriate models and patterns are determined by the discourse community. A writer uses some useful devices to convey a message to a reader who should be able to grasp it. An author has to use his language correctly in terms of grammar, vocabulary, and mechanics. However, for a message to be conveyed and understood, it is significant for the writer's language to be formally correct. Hence, both correctness and appropriateness are significant in any piece of discourse (Stapa & Irtaimeh, 2012).

Rhetorical Structure Theory (RST) that was developed in 1980s at the Information Science Institute of the University of Southern California by the researchers interested in Natural Language Generation such as William Mann, Christian Matthiessen, Sandra Thompson, and their

colleagues explains how texts or passages work. A passage can be read and considered if it is interesting, clear, persuasive, and memorable. There are some significant factors in written contexts like "cohesion" and "coherence" contributing to the unity and integrity of paragraphs or texts. Native writers have perceptions about which order of utterances should be included in a text to lighten their way of writing. In other words, such devices are used to organize a piece of writing logically. Using these devices, writers are able to make an appropriate relationship between sentences to persuade readers to continue reading.

The use of rhetorical devices by scientists, researchers, and writers of academic articles is inevitable. The archaic definition of rhetoric is the art and study on the use of language with persuasive effect in any given field such as medicine, engineering, politics, psychology, etc. It is argued that whenever two large text spans are associated through a rhetorical relation, that rhetorical relation holds also between the most influential parts of the constituent spans (Marcu, 1997). Rhetoric studies the effectiveness of language comprehensively. Rhetorical devices typically provide heuristics for understanding, discovering, and developing arguments for particular situations in a particular subject, such as medicine.

Medical articles written by native and nonnative writers have been investigated from different aspects. For example, Mahbudi, et al., (2014) found that native English writers of medical research papers make use of nominalization more than their Persian counterparts. However, the hierarchy of the moves in medical article abstracts written by native English writers and their Persian counterparts has not been explored yet. In this relation, the main purpose of this study was to find out what types of rhetorical devices are used by English writers of medical articles and their Persian counterparts and whether there was any difference in the use of these devices by native and nonnative writers. The use of rhetorical devices and their role in making a passage as understandable as possible are inevitable to make the reader continue reading. In order for a passage to keep the reader eager and not to leave his reading, it should have logical relations, proper function, and proper hierarchy. As a result, the present study intends to look into such issues in medical articles written by native speakers of English and Iranian writers.

1.1. **Theoretical Background**

This research is based on Rhetorical Structure Theory, RST. As Mann and Thompson (1988) have suggested, Rhetorical Structure Theory (RST) is a useful framework to explain the relations between sentences, clauses, and paragraphs.

A part of the success of Rhetorical Structure Theory (RST) over the years and its currency today is that it has been applied to different areas of science (Taboada & Mann, 2006). RST describes text organization by the explanations of relations that are actually maintained between various and unlike parts of a passage. Rhetorical Structure Theory was created as a way to attribute structure to text. The central constructs in RST are rhetorical relations.

Three main aspects of RST are relations, function, and hierarchy. All these terms are used to represent the unity and appropriateness of a passage. RST recognizes hierarchic structure in a passage. A text has to be organized and arranged according to the schema which is defined for a particular purpose. In the schema, there are patterns including text spans, "a specification of the relations between them, and a specification of how certain spans (nuclei) are related to the whole collection" (Mann and Thompson, 1988. p. 247).

2. Review of Literature

Considering the undeniable dominancy of English in article publication, over 95 per cent of publications in the Science Citation Index in 1995 were in English (van Leeuwen, Moed, Tussen, Visser, & van Raan, 2001). Accordingly, the necessity for academic authors, both native and non-native speakers of English, to publish articles in English and to get recognition of and appreciation by their discourse communities could easily be observed. According to Tse and Hyland (2010:1880), the basic assumption that no finding, discovery, or insight has any validity until it has gained peer acceptance through publication in a journal is not uncommon.

Thus, to make reading and writing of medical articles easier, native and non-native authors are to be aware of the rhetorical organization which are used in their medical passages conventionally. In writing medical articles, like other types of scientific articles, the authors are aware of their options as they produce medical texts.

In many countries, the academicians, who also play the most important role in the writing community, publish research articles for different reasons such as career advancement, sharing of knowledge, research funding, prestige, etc. It is said that cultural and disciplinary differences can influence the structure of abstracts. Chalak and Norouzi (2013) argued that providing Persian researchers with explicit knowledge of rhetorical structures will enhance the quality of English abstracts written by them. In the research conducted by Zand-Vakil and Fard Kashani (2012) the move structures of the abstracts and introductions of Persian and English research articles were analyzed.

Most of the studies on research articles in Iran have focused on rhetorical moves of various genres (Mohsenzadeh, 2013; Hasrati and Gheitury, 2010). Generally, the structure of the research article abstracts defines different models and different formats by various researchers. For example, Chalak and Norouzi (2013) concluded that "Purpose", "Method", and "Results" seem to be obligatory while "Introduction" and "Conclusion" seem to be optional. In a study on medical article abstracts, Talebinezhad, Arbabi, Taki, and Akhlaghi (2012) found that just two of the original abstracts started with "Methods" and "Results" units.

3. Methodology

Abstract is a significant section for analysis in the area of genre analysis and has received an increasing attention in research articles. It, indeed, summarizes the whole article and contains the

basic elements that are explained in detail in the article. Due to the stated reasons, this study was conducted to compare and investigate the use of rhetorical relations in the abstracts of medical articles written by native English authors and their Persian counterparts.

The abstracts used in the present study were gotten from forty research medical articles: twenty written by English native writers and twenty by Persian authors. All the articles were chosen randomly from among the medical articles written in accredited Persian journals, *Iranian Journal of Basic Medical Science (IJBMS)* and *Iranian Red Crescent Medical Journal (IRCMJ)* and accredited American journals, *The American Journal of Medicine (AJM)* and *North American Journal of Medical Science (NAJMS)* published from 2010 on. Following the Rhetorical Structure Theory (Mann & Thompson, 1987), the researchers studied the hierarchy followed in these abstracts by native and non-native authors.

The data collection process of this study contained two steps. The first step involved determining which of the following moves or units, that is "Introduction", "Background", "Objectives", "Methods" "Methods and Materials", "Patients and Methods", "Place and Duration", "Research Design and Methods", "Results", and "Conclusion" were used in the abstracts, and what the hierarchy of the used units was.

In the second step, the collected data were tabulated in the SPSS software (version 21) for data analysis. Chi-square tests were used to find out whether there were any differences in the hierarchy of the moves or units adopted by native and non-native authors and also whether the difference, if any, was statistically significant or not. The P value was considered < 0.05 (P<0.05).

The examples of the hierarchy of the units/moves to organize the abstracts of medical articles used by native and non-native writers are displayed in appendices A and B.

4. Results

In hierarchy examination, tables below were drawn to display the frequency, percentage, and two-sided Chi square tests for each move/unit. The results showed a significant difference in the use of "Introduction", "Aims (Purpose)", "Place and duration of study", "Patient and methods", and "Research design". These moves/units were mostly used by native speakers of English (P<0.05); however, Persian authors did not prefer to use such moves. Only one medical article written by Persian authors used the "Patient and methods" move. All forty medical articles written by native and non-native authors contained the "Results" and "Conclusion" moves. So there was no difference, regarding the use of these two moves, i.e. "Results" and "Conclusion" between native English writers and Persian authors. A statistically significant difference was found in the use of "Background", "Objective(s)", "Methods", and "Materials and methods" by native and non-native authors. P < 0.05

Table: 1

Percentage and number of the units/moves used in the medical articles

Units/Moves	Native authors	non-native authors	two-sided Chi square tests for each move/unit (Pearson Chi-Square)
Background	12(60%)	10(50%)	0.000^a
Objective(s)	3(15%)	11(55%)	7.033^a
Methods	16(80%)	9(45%)	5.000^a
Materials and Methods	1(5%)	10(50%)	10.000^a
Patients and Methods	0(0%)	1(5%)	1.026^a
Results	20(100%)	20(100%)	$.^a$
Conclusion	20(100%)	20(100%)	$.^a$
Introduction	2(10%)	0(0%)	2.000^a
Aims (purpose)	3(15%)	0(0%)	3.000^a
Place and Duration of Study	2(10%)	0(0%)	2.000^a

As table 1 shows, the two moves, i.e. "Results" and "Conclusion" are common in all abstracts. It seems that these two moves are so independent or autonomous that they cannot be put under any other move. However, such moves as "Objective(s)" and "Introduction" can be put under other moves or units, e.g. "Background".

Table: 2

The number of units/moves used by native and non-native authors

	Native Authors	Non-native Authors
5 Units	3(15%)	1 (5%)
4 Units	17(85%)	19(95%)
3 Units	0	0
2 Units	0	0
1 Units	0	0

Table 2 shows that four or five units are so common in most medical abstracts. In other words, most medical abstracts have at least 4 moves or units two of which, that is "Results" and

"Conclusion" are common among all articles. In addition as table 2 reveals, the most common model for medical article abstracts whether written by native or non-native authors is the four-unit model.

5. Discussion

The purpose of this research was to investigate the use of rhetoric in medical articles written by native speakers of English and their Persian counterparts. For this purpose, forty abstracts of medical articles, twenty by native speakers of English and twenty by Iranian authors were chosen. The hierarchy of different moves/units as a remarkable aspect of Rhetorical Structure Theory (RST) was analyzed to demonstrate differences or similarities in the use of different moves or units. The author of an article usually makes a proper chain, that is a hierarchy, to draw the reader's attention and help her/him to comprehend the topic under discussion. Texts are to be organized well to create proper comprehension for the readers.

As was shown in tables 1 and 2, there are many significant differences in the choice of the abstract units. "Results" and "Conclusions" are two units common in all medical abstracts. These two moves are so independent and autonomous that they cannot be put under the other moves. In other words, these two moves do not overlap with the other moves. However, such moves or units as "Introduction", "Background" and "Purposes" can overlap. For example, "Purpose" and "Background" can be covered by "Introduction" or "Introduction" and "Purpose" can be covered by "Background".

Chalak and Norouzi (2013), in a study comparing the use of structural moves and verb tense in the abstracts of academic research articles written by American and Iranian writers found that three moves, "Purpose", "Method", and "Results" were more frequently used than other moves. They came to the conclusion that the use of these three moves was "obligatory" in academic writings. However, in the present study, the findings indicated that "Results" and "Conclusion" were the obligatory units/moves in the medical articles written by both native and non-native authors. It should be remembered that the move "Method" was also used very frequently by both native and non-native English writers of medical articles (16 abstracts by native writers and 9 abstracts by non-native writers). Of course, the same move had been used in the abstracts, but under other terms, "Methods and Materials" (in 11 abstracts) and "Patients and Methods" (in 1 article). This shows that this concept is also more or less obligatory in medical abstracts but under different terms. This variation can be attributed to the nature of some medical articles, which deal with patients.

There is some research on rhetorical structures in academic research. But in another study done by Talebinezhad, Arbabi, Taki, and Akhlaghi (2012), the rhetorical variation in the translated abstracts from Persian into English and comparing them with abstracts originally written in English were investigated. They found that two of the original abstracts started with the units "Methods" and "Results" in spite of the fact that according to Martin (2003) and Swales (1990),

introduction is an obligatory section in the abstracts of research articles. In our study, only two abstracts of medical articles written by native authors started with the "Introduction" unit/move. This discrepancy can be attributed to the format of the journal in which an article is published or the field in which the article is written.

6. Conclusion

The authors of medical articles do not follow the same hierarchy of moves/units in the abstract of their articles. This variation for the English native writers mostly depends on the format adopted by the journal or the preferred style of the writer. However, for nonnative writers, the cultural background and the preferred style in their native language may have a part.

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