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A Contrastive Rhetoric Analysis of 'Code Glosses' in Medicine Academic Research Posters Written in English by Native and Iranian Writers

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Abstract

The present contrastive rhetoric study was aimed at analyzing 'Code Glosses' in a corpus of 60 Medicine Academic Research Posters (MARPs) written in English by Native and Iranian writers. To the best of the researchers' knowledge, none of the previous studies had focused on this case. The two mentioned categories of MARPs published from 2012 to 2013 were selected randomly and regardless of particular specialty of medicine disciplinary. MARPs written by native and Iranian writers were respectively taken from F1000 posters site and Fifth International Congress (FIC) on Quality Improvement in Clinical Laboratories held in Tehran, Iran. Hyland's (2005) model was used as the framework of the study and 'Code Glosses' were scrutinized in the corpus as the sub-type of meta-discourse markers. In line with the goals of the study the researchers conducted the following procedures: First, they performed the quantitative analysis of 'Code Glosses' by text analyzer_ MAXQDA software. Then, they performed the qualitative analysis manually to be sure of meta-discourse functionality of the counted markers in the context. Finally, they ran Chi- Square tests at α=0.05 to determine the probable significant differences between two categories of MARPs. The results of the study showed a significant difference between MARPs written by Native and Iranian writers in using rhetorical strategies regarding' Code Glosses'. It can be concluded that the observed difference was due to writers' different first language and cultural context.

Keywords: Contrastive Rhetoric, Code Glosses, academic posters, medicine, meta-discourse, analysis, native, Iran, non- native

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1. Introduction

On one hand, research on academic writings has so far examined a variety of genres including journal articles, abstracts and dissertations in the past three decades. On the other hand, genres such as conference poster presentations have hardly received enough attention of the researchers (D'Angelo, 2010 & Hyland, 2000). Hyland (2000) argues that in hard sciences posters are mostly used and valued. Moreover Swales (2004) argues that different research genres have different value in the view of different discourse communities.

An extensive amount of publications on academic poster has introduced it as a technique (e.g. Block, 1996). Miracle (2003) also discussed preparing professional posters in the workplace of care nursing. Some researchers (Brown & Duguid, 1991; Gherardi, 2000/ 2001; Wenger, 2000) studied posters as a situated action and (Miller, 1984; Paré & Smart, 1994) examined it as social action. (Van Naerssen, 1984; Hay & Thomas, 1999) argued that academic posters could be utilized as a pedagogical device within university courses. Baird (1991) explained the arrangements of employing posters in a classroom as a collaborative learning tool. However, merely a restricted number of studies have been done on linguistic analysis of academic posters. As D'Angelo (2011) states this general neglect on the part of linguists inevitably condemns the poster to second class status, compared to other more familiar genres.

MacIntosh and Murray (2007) scrutinized forms, norms, and values of posters. Salzi (2008) explained the systematically acceptance of poster exhibitions. Matthews (1990) presented guidelines including grammar, rhetoric and graphic design for effective visual communication and visual perception.

D'Angelo (2010) introduced a framework for the analysis of academic posters. She also (2011) studied meta-discourse/visual analysis of academic posters across disciplines such as psychology, law, and physics.

Posters are multimodal communicative genres including text, graphics, color, speech, and even gesture used to convey meaning (Kress & van Leeuwen, 2001). Like research articles, posters need to follow a clear format and content organization to ensure both coverage and clarity (Alley, 2003). Poster sessions, in particular, are increasingly important part of scientific conferences and constitute a valid and interesting alternative to paper presentations at conferences (D'Angelo, 2010).

Researchers and academics need to be able to disseminate and communicate their findings and research works. While many will view writing for peer-reviewed journals as the pinnacle of the academic communication hierarchy, being capable to write and present conference posters is also extremely important. Taking the posters to conferences allows the researchers to meet experts from all around the world, exchange ideas in person and network with potential employers and collaborators. Therefore, preparing conference posters is an important part of the professional life of the majority of the academics. It

can make the difference between acceptances for presentation or no presentation. It also influences the way researchers and their researches are perceived by peers, superiors, and potential employers or grant awarding bodies. This is particularly true when a researcher is striving for recognition of the respective research in an increasingly crowded and competitive arena. Despite the increasing development of tools of presenting posters, it should be noted that scientists are skeptical, and a flashy poster cannot conceal dubious data and selection committees look for good science.

Therefore, a confusing or an incomplete abstract may underestimate the standard of the research. A well written abstract allows the scientific quality of a study to be assessed objectively. Furthermore, in competitive fields posters help to establish the originality of an idea because scientists attach importance to originality. As it often takes a long time to do the research and have it published, it sometimes helps to 'stake a claim' through an abstract, especially if the abstract is available in the public domain after the meeting. A poster is different from a paper for publication. It has to capture attention across a crowded hall and encourage them to read it. The most important factors affect the acceptance of the posters by prestigious and competitive meetings are the quality, novelty, reliability, clinical and scientific importance of the work. The abstracts may be rejected because they are not well written or they contain old information or a vague discussion of the importance of the topic area. Right or wrong, reviewers may be inclined to look more favorably at abstracts that are well structured and written in good English (Fraser, 2009). Writing the text for a poster is actually a delicate process, and space available on the poster is limited.

On one hand, experimental works such as medicine research posters should contain title, background/objectives, methods, results, and conclusions expressed clearly (Fraser, 2009).On the other hand, Meta-discourse elements such as ‘Code Gloss’ signals are to relate a text to its context by taking readers’ needs, understandings, existing knowledge, inter-textual experiences and relative status into account. ‘Code Glosses’ as elaboration devices illuminate how writers project themselves into their discourses by signaling their attitude towards both the content and the audience of the text. In other words, reformulation and exemplification not only support the writer’s position and contribute to communicative effectiveness, but also structure the means by which s/he is able to relate a text to a given social and interactive context. By making rhetorical choices of this kind, writers also signal their judgments about readers. They convey an understanding of a community and how they wish to position themselves in this community by conveying audience-sensitivity and projecting a relationship to the message and to the readers (Hyland, 2000/ 2005).

MARPs should be written in good English. Good English is targeted by the researchers and instructors since producing well- written posters can result in communicating effectively with the audience. Such posters can also be

accepted by the selection committees in international communities. Therefore, the present survey is an attempt to investigate MARPs written by Native and Iranian writers as for employing 'Code Glosses' in order to decipher the features differentiating the Iranian group from the Native one to be applied for ESP pedagogical purposes. It may be a contribution to decrease the existing gap in the linguistic analysis of academic research posters.

3. Methodology

3.1.The Corpus

This study examined 60 randomly multimodal selected medicine academic posters in English-30 for each study group- having the standard structure (Introduction, Method, Results, and Conclusion).The corpus related to two study groups including Native, and Iranian writers of medicine academic posters published during the year 2012 taken from an open repository of posters [http://posters.f1000.com], and the fifth international congress on quality improvement in clinical laboratories established in Tehran, Iran, respectively. They were selected irrespective of any medical specialty to increase the external validity of the findings.

3.2.The Instrumentation

3.2.1.The Framework of the study

The present study used Hyland's taxonomy (2005) as the framework for analysis of 'Code Glosses' within of Medicine academic posters. Hyland's interpersonal model recognizes two dimensions of Interactive and Interactional markers, and 'Code Glosses' is considered as one of the sub-types of interactive markers.

3.3.The Procedure of the Study

3.3.1.Quantitative procedure

First, a list of 39 potentially productive 'Code Glosses Items' were compiled based on previous research on 'Code Glosses' (e.g. Hyland, 2000), and on a careful study of the corpus themselves to elicit the most frequently occurring 'Code Glosses items 'in the academic posters.
Second, the corpus was converted to text by a PDF converter software, then it was converted to an electronic corpus of total 36,012 words and searched for counting 'Code Glosses' which could potentially act as interactive markers using MAXQDA software.

3.3.2. The Qualitative procedure

After determining the frequency of the 'Code Glosses' within the corpus, they were checked in the context to ensure that they functioned as interactive markers to increase the validity of the results.

3.3.3. Performing Normalization

The frequency of 'Code Glosses', total interactive markers, and total metadiscourse markers as well as the total number of the words (the raw data) within the medicine academic posters were obtained. Since the consistency of the length of the articles is essential to make the results comparable, the raw data calculated in 10,000 words.

3.3.4. Intra-rater and Inter-rater Reliability

To avoid subjectivity, a number of randomly selected academic posters from the corpus, were analyzed by the researcher twice with an interval of more than two weeks. Furthermore, an M.A holder of TEFL (rater 2) was asked to analyze the same sections of the same articles after receiving sufficiently training in how to do the task. The Spearman's correlation-coefficient test between the two ratings done by the researcher (intra-rater) as well as between the two ratings done by the researcher and the second rater revealed the reliability of the researcher's judgments in analyzing the method section of the medicine RAs.

3.4. Data Analysis

Chi-Square tests were run to determine the probable differences between the two groups including the Native, and the Iran groups in regard with employing 'Code Glosses' in order to respond the research question of the present survey.

3.4.1. Hypothesis of the study

There is significant difference between the Native and the Iranian writers writing medicine academic posters as for employing 'code glosses'.

3.4.2. Research question

What are code gloss items that differentiate the Native writers from the Iranian writers of discussion section of academic posters?

3.5. The Variables of the Study

3.5.1. The Dependent Variables

The frequency of 'Code Glosses' employed in the medicine academic posters by the two groups of the study.

3.5.2. The Independent Variables

The rhetorical aspect of using 'Code Glosses' in medicine academic posters by the two study groups is the independent variable.

4. Results

The present study examined a corpus of 60 MARPs written in English- 30 written by native writers and 30 by Iranian writers. It scrutinized total 36,012 words related to the corpus of the study rhetorically. The native group used 20,592 words, while the Iranian group used15,420 words. Thus, the number of words used in MARPs by the native group was more than that of the Iranian group (Table1).

Table1. The frequency of Code Glosses, total meta-discourse markers, and total words inMARPs used by the study groups (raw data)

	The Study Groups		Total
	Native	Iranian	
Code Glosses	195	94	289
Total Interactive Markers	1,798	863	2,661
Total Meta-discourse Markers	2,131	1,015	3,146
Total Words	20,592	15,420	36,012

Exerting normalization on the raw data showed that the native writers used more meta-discourse markers as compared with the Iranian group (1034.87 vs. 658.24). Furthermore, the native group used more interactive markers in comparison with the other group (873.15 vs. 559.66).

The number of 'Code Glosses items' indicated that the native and the Iranian writers used 94.70 and 60.96 instances of 'Code Glosses' per 10,000 words respectively. In other words, the native group used more ‘Code Glosses items’ in comparison with the Iranian group (Table 2). Table 2 indicates the number of ‘Code Glosses’ used by the study groups per 10,000 words (see Figure 1).

Table2. The frequency of Code Glosses, total interactive markers, and total meta-discourse markers in MARPsused by the study groups (per 10,000words)

	The Study Groups		Total
	Native	Iranian	
Code Glosses	94.70	60.96	155.66
Total Interactive Markers	873.15	559.66	1432.81
Total Meta-discourse Markers	1034.87	658.24	1693.11

Scrutinizing the 'Code Glosses items' within the corpus of study reflected the differences between the two groups. It let utilize the outcomes for the pedagogical purposes within the Iranian group regarding using 'Code Glosses' in MARPs (Table 3). According to Table 3 the Iranian group underused most of 'Code Glosses items' (see chart 2).

Table3.The Frequency of Code Glosses items in MARPs used by the study groups (Per 10,000 Words)

The 'Code Glosses' items	The Study Groups	
	Native	Iranian
(	19.43	14.27
Higher	9.71	3.89
Available	9.23	0.00
Similar	6.31	3.24
Standard	3.40	7.13
Respectively	4.86	3.24
Including	4.86	2.59
the first	4.86	1.95
Lower	5.83	0.65
such as	1.94	3.24
at least	3.40	0.65
Relative	3.40	0.00
Conventional	1.46	1.95
the primary	2.91	0.00
most cases	0.49	3.24
increasing	0.97	1.95
especially	0.49	1.95
experimental	1.46	0.65
appropriate	0.00	2.59
various	1.46	0.65
constant	0.97	0.65
subsequent	0.97	0.65
concerning	0.97	0.00
e.g.	0.00	1.30
additional	0.97	0.00

Table3.The Frequency of Code Glosses items in MARPs used by the study groups (Per 10,000 Words) (cont.)

The 'Code Glosses' items	The Study Groups	
	Native	Iranian
transient	0.97	0.00
final	0.49	0.65
in particular	0.49	0.00
in terms of	0.49	0.00
namely	0.00	0.65
regarding	0.00	0.65
immediately	0.49	0.00
freshly	0.00	0.65
corresponding	0.00	0.65
the secondary	0.49	0.00
called	0.49	0.00
that is	0.00	0.65
particularly	0.49	0.00
specifically	0.00	0.65
Total	94.70	60.96

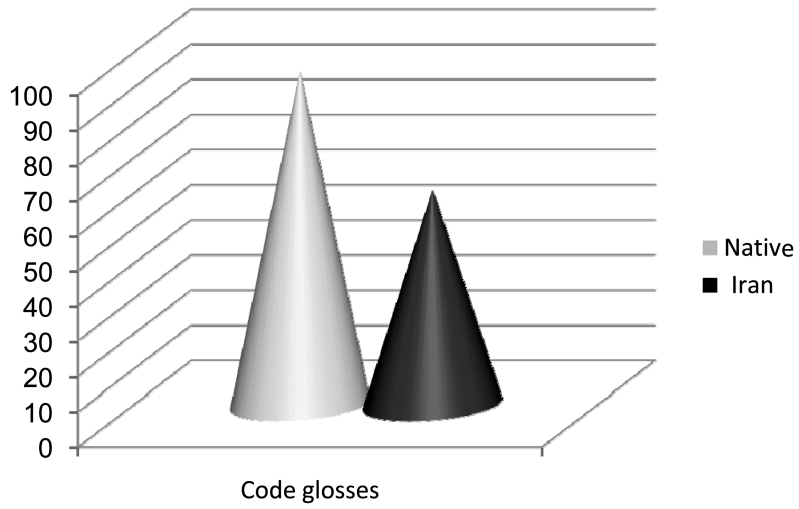

Figure 1. The bar graph representative of Code Glosses in MARPsu sed by the study groups

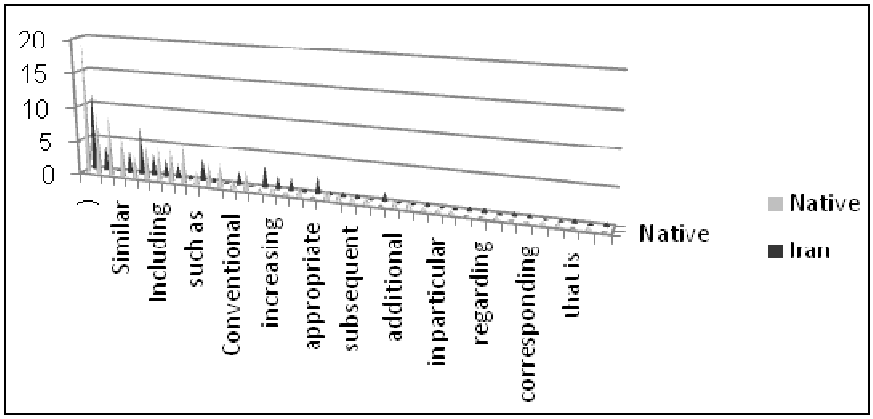

Figure 2. The bar graph representative of Code Glosses items in MARPsused by the study groups

Table 4. The percentage of Code Glosses items in MARPsused by the study groups

Code Glosses Items	The Study Groups	
	Native	Iranian
(	20.51	23.40
higher	10.26	6.38
available	9.74	0.00
similar	6.67	5.32
standard	3.59	11.70
respectively	5.13	5.32
including	5.13	4.26
the first	5.13	3.19
lower	6.15	1.06
such as	2.05	5.32
at least	3.59	1.06
relative	3.59	0.00
conventional	1.54	3.19
the primary	3.08	0.00
most cases	0.51	5.32
increasing	1.03	3.19
especially	0.51	3.19
experimental	1.54	1.06
appropriate	0.00	4.26
various	1.54	1.06
constant	1.03	1.06
subsequent	1.03	1.06
concerning	1.03	0.00

Table 4 .The percentage of Code Glosses items in MARPsused by the study groups (cont.)

Code Glosses Items	The Study Groups	
	Native	Iranian
e.g.	0.00	2.13
additional	1.03	0.00
transient	1.03	0.00
final	0.51	1.06
in particular	0.51	0.00
in terms of	0.51	0.00
namely	0.00	1.06
regarding	0.00	1.06
immediately	0.51	0.00
freshly	0.00	1.06
corresponding	0.00	1.06
the secondary	0.51	0.00
called	0.51	0.00
that is	0.00	1.06
particularly	0.51	0.00
specifically	0.00	1.06
TOTAL	100.00	100.00

The Chi-square tests were run to determine the probable significant difference between the study groups The results demonstrated that there is a significant difference between the groups as for employing the ‘Code Glosses’.

Table5. The results of Chi Square tests between the Study Groupsfor using Code Glosses in MARPs

	Value	df	P value
Chi-Square	7.31	1	0.05
N	155.66		

N = the number of total 'code Glosses'

5. Discussion

The results confirm that interactive markers constitute the higher portion of the total metadiscourse markers compared with the interactional markers within the two groups of study. It may be representative of the significance of interactive congruity as compared with explicit interactional relations with the readers. Interactive markers mainly guide the reader through the text (Thompson & Thetela, 1995), and it is likely that both groups are aware of their readers' demands and have followed the generic norms of the medicine discourse community as for writing academic posters. On the other hand, the predominance of interactive markers over the interactional one may be justified

by presenting verbal explanation on the panels and conferences that can compensate the low density of employed interactional markers within the text of posters. Since there is a relationship between the nature of the propositions and the employed strategy of metadiscourse markers, thus using 'Code Glosses' can clarify ambiguous concepts and it is supposed that code glosses help to interpret the findings effectively. It should be mentioned that though the native writers have enriched their respective posters with more amounts of pictures, Colors, graphics, tables, and lists as compared with the Iran group, they have employed more 'code Glosses' in comparison with the Iranian writers. It demonstrates that during the process of persuasion it is of high importance to illuminate the arguments, and ambiguous interpretations to be assured of achieving successful communication with the audience. In other words the rhetorical norms of writing medicine academic posters in English requires utilizing an appropriate type and amount of 'code glosses' as linguistic semiotics despite that posters are replenished with visual semiotics. It means that the Native group tends to make use of more metadiscourse markers, interactive markers, and 'Code Glosses' to shape their respective medicine academic posters. One implication of the present study is that English academic genre is a more writer-responsible language as compared with Persian language.

According to Mauranen (1993), and Vaero-Garces (1996) different cultural, backgrounds of writers have been found to influence the types and the number of employing metadiscourse features. Kaplan (1966) and Mauranen (2001) state that rhetorical variation across languages in general, and academic communities in particular, can be explained by the socio-cultural aspects of the languages. Though the writers within the two groups pursue the same disciplinary culture, it seems that 'Code Glosses' variation within the groups would reflect rhetorical preferences of the writers, and their perception of the audience that can be affected by the factors including peculiarities of the writers' first language (mother tongue) as well ascultural, educational, and social backgrounds of the study groups. These issues could be taken into consideration for pedagogical purposes by the instructors. Though the Iranian academic posters belong to the international congress in Iran, these posters are not conformed to international norms of writing academic posters in English as for employing 'Code Glosses'. This issue is due largely to its internationality in terms of knowledge content not to its linguistic rhetoric norms.

Different ways of communication tend to define different languages in the world, and the findings of the study verify that Native, and Non-Native (Iranian) academic poster writers each has employed their socio- cultural devices. This reconfirmed by Hyland's statement (2004) that effective writing in different cultures involves a different culture-oriented deployment of resources to represent text and reader.

Collectively known as code glosses in the metadiscourse literature (Hyland 2005), these brief reformulations and exemplifications help to contribute to the

creation of coherent, reader-friendly prose while conveying the writer's audience-sensitivity and relationship to the message. According to Hyland (2007) exemplification and reformulations are two sub-functions of this purpose. He states that Reformulation is a discourse function whereby the second unit is statement or elaboration of the first in different words, to present it from a different point of view and to reinforce the message. In academic writing such connections are often signaled parenthetically or lexically by reformulation markers. Exemplification is a communication process through which meaning is clarified or supported by a second unit which illustrates the first by citing an example. Reformulation and exemplification are not simple discourse functions but complex rhetorical categories which can have a range of meanings (Hyland, 2007). The results show that reformulations are more common than exemplifications within the medicine research academic posters. It may be the consequence of the nature of the hard sciences as medicine, that is, it is less dealing with elaborating and the writers do not need to persuade the reader to accept the existence of a reality.

As Hyland argues (2007), the reformulation markers represent underlying semantic preferences. According to Hyland (2007) Discourse functions of reformulations including expansion and reduction, and expansion divided into explanation and implication. Reduction divided into paraphrase and specification Reformulations in this category which serve to restrict the meaning of what has been said; narrowing the scope of interpretation by either paraphrase or specification. The findings reveal that 'specification' is the most widely employed code glosses by the Native writers of the medicine academic posters. This finding is reconfirmed by Hyland (2007) that biologists used more specification. It could be due to precision, to restricting interpretation and to highlighting the writer's understanding of phenomena in hard sciences as medicine and biology to make observations and interpretations more specific (Hyland, 2007). While this claim is perhaps unsurprising, it is nevertheless worth making. This is because corpus findings help to explain rather than to merely confirm our intuitions about disciplinary practices, underlining that writers' rhetorical decisions are informed by the interactions of members of communities engaged in a common pursuit. In other words, instead of seeing these glosses as simply regularities of academic style or the result of some mental processes of representing meaning, we can understand them as collective responses to a recurring persuasive problem and perhaps appreciate a little more the extent to which they carry the sanctioned social behavior sand epistemic beliefs of individual disciplines (Hyland, 2007).

6. Conclusions

The present study did a textual 'Code Glosses' analysis of conference posters in Medicine discipline within the Native and Iranian groups to discover how the academic research posters genre is shaped and responded by the

members of the medicine discourse community in Native context, which features differentiate these two groups from each other as for employing the markers and which favored employed ones (strategies) by the Native Writers should be known to the Non- native Iranian scholars seeking admission of their research posters to academic communities, particularly international ones.

7. Suggestions

Analysis of linguistic semiotics of conference academic research posters as metadiscourse markers, pervasively could help recognize the rhetorical conventions used in different disciplines which contribute to a comprehensive understanding of the neglected genre and it could encourage or lead to a systematic gathering of posters in the world. It should be mentioned that the main limitation of conducting the present study was that access for Iranian Medicine academic posters in complete form was a serious trouble since they are not at open access at all. Therefore, it took a long time to get them in person. Contrastive analysis between the Native language (predominantly English) and other languages individually would raise awareness of ESP/EAP instructors of foreign/second language learning for utilizing the findings of the contrastive researches in their explicit pedagogical activities and provides insight for educational planners to incorporate the findings into the ESP/EAP learning materials in the future. These could influence the number of being admitted posters written by Non- Native writers (Iranian) by international communities and consequent increasing of dissemination of the knowledge in the world. Further researches are required to explore the underlying factors as socio-cultural ones which probably lead to the 'Code Glosses' (metadiscursive) differences.

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