
DISCOURSE AND LINGUISTIC CHARACTERISTICS OF RMA INTRODUCTION SECTIONS – A BULGARIAN-ENGLISH COMPARATIVE STUDY

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Abstract: The article seeks to explore the discourse and linguistic means through which the Introduction section of Research Medical Articles (RMA) achieve their goals. For that purpose, we have analyzed 207 original RMA in Bulgarian and 129 in English. The articles have been excerpted from prestigious Bulgarian and high-ranking impact factor English language journals. Four major rhetorical moves have been found to guide the discourse flow in the Introduction sections in both corpora – Bulgarian Corps (BC) and English-language Corps (EC). These are: Move 1 - Introducing the general topic; Move 2: Move 2 – Transition to specific topic; Move 3: Move 3 – Identifying a gap and Move 4 – Aim of research. In connection with the realization of the rhetorical objectives of the Introduction section, basic lexical means have been identified and presented. We used the concept *metaterm* introduced by Mavrodieva and Tisheva (Mavrodieva and Tisheva 2014). We divided the metaterms into *general* and *specific*. It has been proven that a certain type of polysemous nouns are of particular importance in the medical context and can therefore be considered as specific metaterms. In both corpora, a number of variable and unchangeable parts of speech have been discovered that are typical of the RMA. Essential to the cohesion and coherence of texts are the so-called high-frequency words: nouns, verbs, adjectives, prepositions, adverbs, collocations and colligations. Regarding Tense and Voice, it has been pointed out that in line with the tradition of the Bulgarian scientific discourse community, the main tense is the so-called *Generalized Present Tense* (Uslozhneno segashno vreme), whereas in the English-language Corps these are Present Simple and Present Perfect. As for Voice, the BC articles make use mostly of Active Voice, while Passive Voice is used to refer to problems in focus and with impersonal constructions. A peculiar feature of scientific texts in Bulgarian is the use of reflexive verbs with the particle *se*. The specificity of the sentence structure in the Introduction includes the so-called in Bulgarian linguistics “complicated simple sentences”, including many pre and post modifiers, heavy complementation, as well as compound and complex sentences. Some of the most important discursive elements of this section of RMA are also analyzed. The comparison is direct between the two corpora, and the elements under scrutiny cover such aspects of discourse as *hedging* and *discourse markers* (DM). With regard to the first element, hedging, from a theoretical point of view, it is important to emphasize that hedge structures are a form of the author's Ethos and identity, its degree of presence in the text. We have noted the role of DM as linking devices in the text, marking the boundaries of Steps and Moves in the RMA and indicating a change in the information flow and in the authors' stance.

Keywords: introduction, research medical article, hedging, discourse markers

1. INTRODUCTION

The Research Medical Article is a highly technical form of writing with a standard format for the presentation of information. The paper is divided into four structural parts, e.g. “Introduction, Methods, Results and Discussion” – briefly called IMRD. Swales was the first to observe and analyze the rhetorical status of the genre of the Research Article in general. First, as Swales [1,2] suggested, “...a genre comprises a class of communicative events, the members of which share some set of communicative purposes”. These purposes are recognized by the expert members of the parent discourse community and, thereby, constitute the rationale for the genre. As far as the structure and organization of specific texts in a given genre, Swales put forward the idea of rhetorical moves. A move in genre analysis is defined as “a discursive or rhetorical unit that performs a coherent communicative function in a written or spoken discourse” [1]. Moves then are subdivided into Steps. Swales also proposed the CARS (Creating a Research Space) model of rhetorical moves in research articles, which has become the keystone in this field of linguistic and discursive analysis. Since Swales' [2] pioneer work in scientific text analysis, there has been an influx of analytical papers delving into the structures of the various parts of the research article [3]. The Introduction section has been widely studied in a range of areas (e.g. Sciences, Law, Economics, Medicine), by Swales [1,2], Cooper [4], Hopkins [5], Crookes [6], Samraj [7], and Ozturk [8], Kanoksilapatham [9, 10], etc. All of these scholars accepted Swales' three-move schema for the Introductions of articles: Move 1: Establishing a

territory; Move 2: Establishing a niche; Move 3: Occupying the niche. Skelton [11] was the first to differentiate the “Aims of the study” as a separate, fourth in line Move.

Similarly, assessment of linguistic features of RAs has been done, such as: lexicogrammatical choice by B. Kanoksilapatham [10]; linguistic mechanism by J.M.H. Lim [12]; linguistic features of evaluative stance by A. Khamkhien [13]; metadiscoursal elements, namely, hedges and boosters by M. Takimoto [14], etc.

Most analyses of RMA though are monolingual, while contrastive ones (comparing RMA in different cultures and academic communities) are rare. With regard to Bulgarian applied linguistics, such investigations have not been performed.

The aim of this research is to conduct a contrastive analysis of Bulgarian and English introductions as part of the IMRD structure of the RMA and to ascertain their rhetorical and linguistic characteristics.

2. METHODS

The study presents a quantitative and qualitative analyses of Introductions of research medical articles with regard to their rhetorical structure and linguistic features. It is based on two corpora of 207 articles in Bulgarian and 129 in English respectively, all excerpted from prestigious high impact factor journals. The articles vary in range, encompassing 34 fields in medicine. The Move analysis rests upon the findings from the corpora of four-schema structure in the Introduction section of RMA. The linguistic features include lexical and morpho-syntactic elements such as high-frequency words, tense and aspect, syntactic structures. To identify the frequency of key words in the corpora, we have used WordSmith Tools, version 6 is for Windows 2010. In order to identify the most common syntactic structures in the Introduction, we have performed manual analysis of the excerpted texts, setting up small corpora for this purpose, including 24 articles in Bulgarian and 18 in English.

3. RESULTS

3.1. Rhetorical Structure of the Introduction

The texts in the Introduction section of the articles in Bulgarian journals, excluding abstracts, tables, charts, bibliographic reference and applications, accounts for $\approx 17\%$ of the total text volume or an average of 255 words per article. Structurally, four subparts stand out with about 80% presence, i.e., these are the four conventional Moves in this part. Concerning the volume of words in the Introduction section of the English corpus, it represents $\approx 10\%$ of the total volume of the articles in the English Corpus, or ≈ 287 words per article. Structurally this part is composed of four conventional steps as well. Table 1 presents the findings of the research as regards the rhetorical structure of the articles from either corpus.

Table 1: Rhetorical structures of RMA from both corpora in contrastive mode.

Bulgarian language articles	English language articles
Move 1 – Introduction of general topic <ul style="list-style-type: none"> • Step 1: General context • Step 2: Focus on specific issue 	Move 1 –Introduction of general topic <ul style="list-style-type: none"> • Step 1: Importance of topic • Step 2: Support for importance of topic.
Move 2 - Transition to specific topic <ul style="list-style-type: none"> • Step 1: Defining the specific topic (range of research, therapy, methodology) • Step 2: References to previous studies • Step 3: Comment on finding in previous studies 	Move 2 - Transition to specific topic <ul style="list-style-type: none"> • Step 1: Identification of problematic area, • Step 2: Data from previous research.
Move 3 – identification of research niche	Move 3 – identification of research niche
Move 4 – Aim of study <ul style="list-style-type: none"> • Step 1: Analysis of methods, procedure, treatment; • Step 2: Defining new procedures, methods, treatment • Step 3: Description of methods, procedures, treatment 	Move 4: Aim of the study <ul style="list-style-type: none"> • Analysis of problem solution • Problem solution • Secondary aim of study – verification of procedure, experiment, etc

3.2. Linguistic characteristics of the Introduction

The total number of words and sentences in the Introduction in the corpus of articles in Bulgarian is respectively 52785 words and 2877 sentences, which makes an average of 18 words per sentence. In the English Corpus, the

number of words is 37023, and the sentences are 1191, with the ratio averaging 31 words per sentence. The lexical density of the Introduction is 54.6809 in the Bulgarian Corpus and 35.34 in the English Corpus.

In order to achieve a high degree of coherence and cohesion, and in the fulfillment of the functional objectives of the Introduction section, a significant role is played by the so-called high-frequency lexical units - nouns, verbs, adjectives, adverbs, prepositions, connecting devices. Together with the specific terms indicating objects, processes and phenomena from the narrowly specialized area, there are also the so-called by Mavrodieva and Tisheva [15] metaterms: "[...] words inherent in scientific communication in different scientific fields ...". We found many such words (nouns and verbs) in the Introduction and we further divided them into specific (in the field of medicine) and general metaterms. In the English corpus, the number of high-frequency specific metaterms-verbs is greater, while the diversity of high frequency general metaterms-nouns is fewer than that in the Bulgarian language corpus. In the English language corpus there is almost a complete parity in the number of general and specific nouns, and there are many polysemantic words with special reference. Regarding Tense and Voice, it has been pointed out that in line with the tradition of the Bulgarian scientific discourse community, the main tense is the so-called Generalized Present Tense ("*Uslozhneno segashno vreme*"), whereas in the English Corpus these are Present Simple and Present Perfect. As for Voice, the Bulgarian articles make use mostly of Active Voice, while Passive Voice is used to refer to problems in focus and with impersonal constructions. A peculiar feature of scientific texts in Bulgarian is the use of reflexive verbs with the particle *se*. Active Voice is even more prominent in the English Corpus, which aids the dialogical nature of the texts. The specificity of the sentence structure in the Introduction includes the so-called in Bulgarian linguistics "complicated simple sentences", including many pre and post modifiers, heavy complementation, as well as compound and complex sentences.

4. DISCUSSION AND CONCLUSION

In view of the rhetorical structure of the articles from either corpus, there are differences on the level of Steps, not of Moves. Overall, Bulgarian language Introduction sections define their research area more broadly, i.e. they start with a very general outline of the topic, more peculiar to a popular type of article on medical problems. Then, they seldom pinpoint any lacunae in previous studies, preferring to present the advantages of their method. Such an approach avoids the direct "clash" when establishing a niche, which is typical for the English language articles.

As far as the lexical structure is concerned, of interest is that there has been found only one high-frequency verb in the Bulgarian corpus, "predstaviam" which is a calque of the English "present" and is used in expressions such as: "symptoms / manifestation / disease present themselves". Other similar calques are "expressing", "terminating", "persisting", "aggressing", and so on. The reflexive forms of verbs in third person plural are widely used, such as: "ustanovyavat se" (are identified), "nablyudavat se" (are observed), "sreshtat se" (are met), etc. Nouns, such as "prezhivyaemost" (survivability), "izyava" (expression), "otgovor" (response), although considered common, have specific meaning in medicine, that is why, they can be considered as special metaterms. Adjectives are usually part of colligations, with a significant percentage of them having a clearly defined "priming", i.e. "a high degree of textual colligation" [16, 17]. For example, "risk" selects a "factor", "clinical" – "study", "important" - "factor", and so on. Both corpora abound in such colligations.

From the data obtained with regard to "hedging", it can be concluded that in both languages, hedge structures are strongly determined by the standards imposed by the discursive community and are similar in volume and content, while the linguistic means inherent in the respective language mediate and define differences in surface structures - especially in view of the greater expression of modal verbs in the articles in the English Corpus and respectively the "offset" in the articles in the Bulgarian Corpus - mainly by means of depersonalization strategies. The very rhetorical structure of the articles of the two corpora implies insignificant differences as regards the structure and distribution of hedge forms. In general, the rhetorical function of these forms has an equivalent linguistic force in the excerpted texts of the two large corpora.

In conclusion, we may say that we have found more similarities than differences in the corpora. The structure, the main linguistic devices used are similar in both corpora, while the differences are akin to the specific cultural and academic traditions inherent in each discourse community.

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