Ewa Donesch-Jeżo

CROSS-CULTURAL VARIABILITY
OF RESEARCH ARTICLE ABSTRACTS FROM DIFFERENT
DISCOURSE COMMUNITIES

**Różnice międzykulturowe streszczeń artykułów naukowych pochodzących
z różnych społeczności dyskursu**

Globalizacja świata akademickiego spowodowała, iż angielski stał się głównym języ-kiem komunikacji naukowej. W konsekwencji język ten jest dla naukowców narzędziem prezentowania ich osiągnięć oraz zdobywania uznania na arenie międzynarodowej, co jest niezbędne dla rozwoju ich kariery zawodowej. Gatunkiem odgrywającym kluczową rolę w dzieleniu się wiedzą wśród naukowców jest streszczenie artykułu naukowego. Jest to pierwsza po tytule część artykułu, którą napotykają czytelnicy i która wpływa na ich decyzję o tym, czy artykuł wart jest przeczytania – a także na decyzję wydawców czasopism, czy wart jest upublicznienia. Celem niniejszego artykułu jest przedstawienie międzykulturowej analizy porównawczej struktury retorycznej, funkcji językowych oraz aspektów promocyjnych streszczeń artykułów naukowych. Badanie opiera się na spe-cjalistycznym korpusie językowym, obejmującym 60 streszczeń artykułów naukowych w języku angielskim napisanych przez uczonych z dwóch różnych kręgów kulturowych i językowych, tj. przez native speakerów i non-native speakerów (autorów polskich). Analiza streszczeń, oparta na modelu analizy retorycznych kroków w dyskursie, pro-ponowanym przez Swalesa i Feak (2009) oraz modelu metadyskursu Hylanda (2005), wykazała: 1) podobieństwa i różnice w liczbie, rodzaju i sekwencji retorycznych kro-ków oraz ich struktury; 2) wpływ konwencji dyskursu akademickiego na wybór struktur

gramatycznych, słownictwa i stylu streszczeń napisanych przez wyżej wymienionych autorów. Oczekuje się, że wyniki tej analizy pomogą w przygotowywaniu materiałów dydaktycznych mających na celu ułatwienie zrozumienia konwencji dotyczących struktury i stylu streszczenia artykułu naukowego.

Słowa kluczowe: artykuł naukowy, streszczenie, retoryczne kroki, korpus językowy, metadyskurs, stwierdzenie promocyjne

1. Introduction

A highly competitive contemporary research world, with the English language as a *lingua franca* for the communication between academics forced scholars and graduate students to write their research in English to gain international recognition in their research field, and to have their articles published in internationally recognized science journals. Moreover, publication of research articles plays a crucial role in the evaluation of the scientific achievements of academics, necessary for the progress in their professional career. As Hyland (2007, p. 1) states, "Writing in the academy has assumed an enormous importance in recent years as countless students and academics around the world must now gain fluency in the conventions of academic writing in English to understand their disciplines, to establish their careers or to successfully navigate their learning." Therefore, researchers from various cultural and linguistic backgrounds, including the Polish one, are required to publish a prescribed number of research papers in prestigious international journals.

A research article (RA) as well as its abstract belong to the most distinguished academic genres (Swales, 2004). Writing a research article and its abstract in English is a challenging task for academics, particularly for those from non-English-speaking countries and novice researchers who commence writing research articles.

In relation to this, over the past few decades, a growing body of studies on the rhetorical structure and lexico-grammatical features of research articles has been observed. However, pedagogically-motivated contrastive analysis of RA abstracts written by Anglo-American and Polish researchers in two languages – Polish and English, terminated with the proposal of teaching instruction and learning tasks, is needed in view of scarcity of such studies and the importance of such an analysis for the *English for Academic Purposes* instruction.

Before commencing the current analysis, clarification of the terms such as "genre", "genre analysis" and "rhetorical move" is necessary. "Genre" was defined by Swales (1990) as a class of staged and structured communicative events, performed by specific discourse communities whose members share some set of communicative purposes. According to this author, "genre analysis" is an exploration of discourse features in the broad context of the communicative event, and an attempt to provide the rationale for these features regarding content and

style. Each genre exhibits some patterns of similarity in terms of structure, style, content, lexico-grammatical items and intended recipients.

The analyses of the textual organization of research articles in various disciplines were performed employing the IMRD (Introduction, Method, Results, Discussion) model and the models of the rhetorical "moves" of each of the RA sections. For the purpose of the analysis of rhetorical moves of the RA, particularly its introduction section, Swales (1999, 2004) proposed the Create a Research Space (CARS) model. Swales noted that there is a regular pattern of "moves" and "steps" that appear in a certain order in the majority of introductions investigated. A "move" in genre analysis is a rhetorical, semantic unit which performs a coherent communicative function in a written or spoken discourse. It is flexible in terms of its linguistic realization. Moves are functional units, and can be optional or obligatory in a genre. Some moves occurring regularly in a genre are considered obligatory, others occurring less frequently are considered optional (Swales, 2004, p. 228–229). Pho (2008, p. 17) wrote, "each move has its own communicative purpose, which, together with other moves, contributes to the general communicative purpose of the text." The CARS model of the introduction shows the ways in which academic writers justify and motivate their contribution to the research field by establishing a topic for the research, presenting the findings of the previous research and indicating a gap or possible extension of their research.

Studying the impact of culture on discourse structure variation, Kaplan stated, "the cultural background of the author might lead to variation of the rhetorical structures of texts, and such variation should be considered in ESL teaching programs" (Taylor and Chen, 1991, p. 319). Considering the variation of RA rhetorical structure between languages, researchers who wish to publish in an international community and for foreign readership will need, not only to know the writing conventions of this genre, but also to be aware of cross-linguistic and cross-cultural differences in the RA structure. Hence, in the majority of cross-cultural and cross-linguistic analyses of the RA structure, RAs written by non-native-English speakers have always been compared with those written by native-English speakers.

Gaining, therefore, the understanding of the conventions of the rhetorical and linguistic features of the research article and the accompanying abstract is essential for writing an acceptable and correctly organized academic text.

The knowledge and skills necessary to write RA abstracts which are rhetorically and linguistically appropriate and adjusted to the standards of an international academic community, and which will be accepted by science journal publishers, is extremely important for those researchers who do not have English as their first language. One of the most commonly used approaches to teaching RA abstract writing is analyzing its structure with the reference to the prescriptive model and testing its affinity to it, using the corpus of abstracts from a specific discipline. Additionally, the comparison of abstracts from different cultural and

linguistic backgrounds may be carried out, discovering differences and similarities of generic organization and linguistic realization of the rhetorical moves in this genre.

This article employs a genre-based, corpus-driven approach to the contrastive analysis of 60 research article abstracts in order to:

1) reveal differences and similarities between abstracts in the field of linguistics written by native speakers of English and non-native speakers, namely Polish scholars writing in both English and Polish,
2) find out which types of rhetorical moves and in what sequence are used by writers from different cultural and linguistic backgrounds,
3) identify the most typical lexico-grammatical features associated with particular move types,
4) indicate practical implications both for teachers to use in the classroom and for writers who would like to improve the techniques of writing abstracts in order to have them admitted for international conferences and for publication in international science journals.

The analysis will employ the 5-move model as proposed by Hyland (2000, p. 67). In the present analysis, which is a qualitative and quantitative study, first, the results will be discussed for each corpus separately and then the features of the abstracts will be globally summarized and cross-culturally compared (cf. Melander *et al.*, 1997). The comparison of RA abstracts will be performed at the level of their rhetorical structure and at the sentence level, including the use of the tenses and voice of the verbs, and metadiscourse markers. The study presented in this paper is intended to fill a gap in the analyses of the features of RA abstracts in the field of linguistics at these two levels across two languages, English and Polish.

2. Literature review

Research articles in various disciplines were, and still are, a frequent object of scientific investigation. In the analyses of their rhetorical and linguistic features, two basic trends can be noted: (1) the examination of the structural organization of their particular sections: introductions in terms of their move structure (Swales 1990, 2004; Samraj, 2002; Ozturk, 2007), methods (Lim, 2006), results (Brett, 1994; Williams, 1999), discussions (Holmes, 1997; Yang and Alison, 2003) and abstracts (Hyland, 2000; Samraj, 2005; Swales and Feak, 2009); (2) the examination of the functions of various linguistic elements occurring in them, for example, hedging (Hyland, 1994, 1996; Salager-Meyer, 1994), modality (Salager-Meyer, 1992), passive voice (Tarone *et al.*, 1981, 1998; Lachowicz, 1981), tenses of the verbs (Malcolm, 1987; Thompson and Ye, 1991), personal and demonstrative pronouns (Kuo, 1998; Hyland, 2001; Kamio, 2001; Harwood, 2005), personal pronouns and determiners (Gray, 2010).

Apart from analyses of a particular genre in one language (mainly in English), researchers have conducted contrastive analyses of the rhetorical structure and linguistic features of particular academic genres written in different languages and in culturally different discourse communities (Árvay and Tankó, 2004; Čmejrková, 1996; Donesch-Jeżo, 2011; Duszak, 1994, 1997; Hirano, 2009; Mauranen, 1993; Melander *et al.*, 1997; Moreno, 1997; Povolná, 2016; Taylor and Chen, 1991). This type of analysis shows best how the macrostructure and rhetorical organization of a particular genre is influenced by cultural factors, characteristic for a particular discourse community as well as characteristic for intellectual tradition of a given country (Duszak, 1997; Yakhontova, 2006).

Due to the crucial role played by both RA abstracts and conference abstracts, they attracted attention of quite a lot of researchers, who have conducted analyses of this genre (Hyland, 2000; Lorés, 2004; Melander *et al.*, 1997; Pho, 2008; Povolná, 2016; Samraj, 2005; Santos, 1996; Swales and Feak, 2009, to mention a few). For example, Santos (1996) explored the textual organization of RA abstracts at two levels: the macro- and micro-level. Melander *et al.* (1997) in their investigation of abstracts from three disciplines and two languages revealed that rhetorical and linguistic features of this genre depend on the field and size of the discourse community. Lorés (2004) found that over a half of RA abstracts followed the IMRD structure of the research paper, about one third of them followed the CARS structure, and the remaining ones displayed both features. Samraj (2005) in her contrastive studies of two genres (RA abstracts and introductions) across two disciplines, found some discipline- and genre-dependent impacts on the rhetorical structure of theses texts, responsible for similarities and differences between these two genres as well as within these genres. Povolná (2016) analyzed the rhetorical structure of conference abstracts with the aim of ascertaining whether there is any cross-cultural variation between conference abstracts (CA) written by native-English speakers and Slavonic-language speakers, represented by researchers from the Czech Republic, Slovakia, Poland and Ukraine. In addition, she compared the rhetorical organization of the conference abstracts to that of RA abstracts. Her analysis revealed cross-cultural differences in the rhetorical organization of CAs and provided evidence that CAs and RA abstracts also differ with regard to both number and types of moves.

3. Characteristics of the abstract

The abstract of a published article comes first, before other RA sections, and its importance in the distribution of scientific knowledge worldwide continues to grow (Melander *et al.*, 1997). Abstracts were first introduced into medical research articles in the 1960s and since then they have also been accompanying research articles in other disciplines. An abstract as understood by Bhatia (1993,

p. 78) is "a description of factual summary of the much longer report, and is meant to give the reader an exact and concise knowledge of the full article. It contains information on the following aspects of the research that it describes: *What the author did; How the author did it; What the author found; What the author concluded*." A number of researchers (Fairclough, 1995; Ventola, 1997; Hyland, 2000; Swales, 2004) claim that through abstracts writers demonstrate that they have some new findings to present, and that doing it, they can encourage further reading of the article. For this purpose, writers use some linguistic and rhetorical items by which they show the academic community the significance of their study, or the intention to discuss it using an alternative approach, proving, in this way, their scientific competence and credibility in their discipline. Berkenkotter and Huckin (1995, p. 34) express a similar opinion, writing that the abstract is primarily a promotional genre in which writers attempt to emphasize the value and novelty of their work in order to gain the reader's interest and acceptance. Hyland (2000), in the summary of his study on abstracts from various disciplines, asserts that the promotional aspect of the abstract is an equally important rhetorical feature as providing the reader with the knowledge contained in the article.

Another feature of abstracts is their limit to the number of words, which is usually established by publishers of journals, and is provided in the guidelines for publication. In most academic journals the maximum number of words ranges between 150 and 200. This limitation makes the writing of an abstract an extremely troublesome task, as the writers have to communicate relatively large amount of information, using a small amount of words.

With regard to the information provided by abstracts, they were classified by Swales and Feak (2012, p. 384) into two types: *indicative*, which describe what was done, and *informative* or *results-driven*, which additionally provide the main findings.

The analyses of abstracts show, not only how to summarize research/work in a concise and logically organized way, but also which rhetorical and linguistic features would attract the readers' attention and persuade them to read the following sections of the article, and, which is equally important, would persuade the journal publisher to accept the article for publishing (Huckin, 2001; Swales and Feak, 2009).

4. Material and method

The corpus used in the present study included 60 RA abstracts with a total of 8825 words, randomly selected from well-established science journals, Anglo-American and Polish, in the domain of linguistics, published in the years 2010–2015. The complete list of RAs from which the analyzed abstracts originate is provided in the *Appendix* at the end of this article. For the analytical purposes the corpus was divided into three corpora:

- Corpus A containing 20 abstracts written in English by native speakers (NSs) of English, and published in prestigious international science journals.
- Corpus B containing 20 abstracts written in English by non-native speakers (NNSs), namely Polish researchers, and published in leading Polish science journals.
- Corpus C containing 20 abstracts written in Polish by Polish authors and published in recognized Polish science journals.

Although the abstracts in corpus A were written by authors from different countries, they were affiliated with the universities in the countries where the English language was the L1, and their articles were published in the leading Anglo-American science journals; therefore, in this study these writers were designated as native speakers (NSs) of English. The abstracts in corpus B were written by Polish authors in English, and in corpus C by Polish authors in Polish. Polish writers were designated as non-native speakers (NNSs). All of them were affiliated with Polish universities, and published their articles in recognized Polish academic journals.

In the three corpora analysed, the preponderance of abstracts contain one paragraph. The abstracts written by NSs of English have an average of 167.5 words, the abstracts written by NNSs in English have 171 words, and those written in Polish include 103 words. The discrepancy between the amount of the words has no influence on the rhetorical analysis.

In this study, Hyland's (2000) five-move model was used to identify the rhetorical moves of the RA abstracts in the corpus. According to this model, these moves are: Introduction (M1), Purpose (M2), Method (M3), Product (M4), and Conclusion (M5). As shown in Table 1, each move performs a specific communicative function. In contrast to the traditional IMRD model, Hyland distinguishes the purpose from the introduction move where it is usually placed.

Table 1. A framework for abstract analysis

Move	Function
Move 1 Introduction	Establishes context of the paper and motivates the research or discussion.
Move 2 Purpose	Indicates purpose, thesis or hypothesis, outlines the intention behind the paper.
Move 3 Method	Provides information on design, procedures, assumptions, approach, data, etc.
Move 4 Product	States main findings or results, the argument, or what was accomplished.
Move 5 Conclusion	Interprets or extends results beyond scope of paper, draws inferences, points to applications or wider implications.

Source: Hyland (2000, p. 67). *Disciplinary discourses: Social interactions in academic writing*. London: Longman.

As stated by Hyland (2000, p. 68), abstracts include five explicit parts. A brief introduction sets the scene for the reader, providing essential background to the article and indicating the significance of the topic to the academic community. It is followed by a purpose statement, usually embedded in a general description of the method. Then the product of the research is presented, that is, the results of an experimental study. The conclusion explicitly announces the wider significance of the research and implicitly suggests a line of further research.

The analysis presented in this article includes the macrostructure of abstracts, their type (*indicative* versus *informative*), rhetorical moves (their type, number and sequence), their lexico-grammatical features (tense and voice of the verbs), and metadiscourse markers belonging to the interpersonal metadiscourse model (Hyland, 2005, pp. 50–54). Special attention was paid to linguistic means used by the authors to promote the presented research and thereby the article.

As Hyland (2005, pp. 49–54) writes, metadiscourse refers to the devices which the writers use to organize their texts and help readers understand it and those which guide readers through the text. Metadiscourse is realized through a range of linguistic forms which are included in the Hyland's interpersonal model of *metadiscourse*. This model comprises two dimensions of writer-reader interaction: interactive and interactional. The interactive dimension helps to organize propositional information in such a way that readers find it coherent and convincing. Interactional dimension, on the other hand, by implying the writer's stance towards both presented information and readers, involves them in the text and opens opportunities for them to contribute to the discourse. Each of these dimensions includes five sub-categories. The model of metadiscourse is summarized in Table 2.

Table 2. An interpersonal model of metadiscourse

Category	Function	Examples
Interactive	Help to guide the reader through the text	Resources
Transitions	express relations between main clauses	in addition, and, but, thus
Frame markers	refer to discourse acts, sequences or stages of parts of the text	*first, next, finally, to conclude*
Endophoric markers	refer to information in other parts of the text	*as noted above, see Fig, in section ...*
Evidentials	refer to information from other texts	according to X, Z states
Code glosses	elaborate propositional meanings	*namely, for example, such as, in other words*
Interactional	Involve readers in the text	Resources

Hedges	withhold certainty and open dialogue	might, perhaps, possible, about
Boosters	emphasize certainty or close dialogue	in fact, definitely, obviously, it is clear that, demonstrate
Attitude markers	express writer's attitude to proposition	unfortunately, hopefully, surprisingly, I agree
Self-mentions	explicit reference to author(s) in the text	I, we, my, me, our
Engagement markers	explicitly build relationship with reader	*you, your, consider, note, you can see that*

Source: Hyland (2005, p. 49) *Metadiscourse. Exploring Interaction in Writing.* London, New York: Continuum.

The most commonly used hedges in academic discourse are modal auxiliary verbs (*may, might*, *can*, *could*, *would*, *should*), lexical verbs (*suggest*, *indicate*, *seem*, *appear*, *believe*) and adverbs (*possibly*, *probably*, *likely*).

In this analysis, the rhetorical moves and grammatical items were identified manually; lexical elements and metadiscourse markers underwent both manual and mechanical analysis with the use of concordancing software *MonoConc Pro 2.2*. The identification of moves and the move boundaries can be accomplished through two approaches: one, called a "top-down" approach, is based on the content, and the other one, called a "bottom-up" approach, is based on linguistic signals (Ackland, 2009). In this study, the textual boundaries of these units were identified on the basis of semantic criteria, adopting the "top-down" approach.

5. Results of analysis

5.1. Analysis of abstracts in corpus A

Corpus A includes 20 linguistics RA abstracts written by NSs of English with a total of 3352 words. The abstracts come from articles published in the leading Anglo-American journals such as *Journal of English for Academic Purposes*, *English for Specific Purposes*, *Discourse Studies*, *Linguistics*. The majority of abstracts are informative – they provide summary and results of the research.

Abstracts, similarly to research articles, have a specific for this kind of genre rhetorical structure, composed of moves. A move in the abstract performs the same communicative function as in other sections of the research article. Swales and Feak (2009, p. 5) state that a move "is a stretch of text that does a particular job. It is a functional, not a grammatical term. A move can vary in length from a phrase to a paragraph." The number and type of moves in corpus A are shown in Table 3.

Table 3. Frequency of the occurrence of moves in corpus A

Moves	Frequency
1. Introduction (background)	11 (55%)
2. Purpose (objectives)	20 (100%)
3. Method (materials/subjects/procedures)	20 (100%)
4. Product (findings)	19 (95%)
5. Conclusion	15 (75%)

As shown in Table 3, in the present study, most of the abstracts have three moves, that is, the Purpose (M2), the Method (M3), and the Product (M4); the other two moves, the Conclusion (M5) occurs less frequently and the Introduction (M1) the least frequently. Thus, the dominant pattern of moves in corpus A is M2-M3-M4-M5. In those abstracts in which the Product move (M4) and the Conclusion move (M5) are absent, the authors indicate that they are present further in the article. See the examples below:

The implications of these results for teaching academic writing are discussed … (Gray, 2010)

Results and analysis of the instrument's context suitability and limitations are discussed below (Friginal, 2013).

Similar results were obtained by Hyland (2000) in his study conducted on 800 abstracts from eight disciplines, which showed that more than 95 per cent of the abstracts had all five moves; moves 2, 3 and 4 being the most frequent, and move 5 occurring the least frequently.

Below is an example of a linguistics RA abstract from the journal *English for Specific Purposes*, showing the linear order of moves (the borders between the moves are marked in square brackets).

Abstract

Writing the Discussion section of a laboratory report or dissertation is difficult for students to master. It involves complex causal, conditional and purposive argument; this argument guides the reader from acceptance of the relatively uncontroversial data to acceptance of the writer's knowledge claim. Students benefit therefore if they are assisted in acquiring the lexico-grammar commonly used in discussion of results. [M1-Introduction] *To explore the lexico-grammar of Discussions,* [M2-Purpose] *this article relies on two small corpora, one of physics research articles and the other of student physics laboratory reports. The article employs both a clause by clause analysis and concordancing software to identify the key ways of expressing these meanings.* [M3-Method] *It finds the means employed in the student writing to be more congruent, more emphatic and less closely argued than in the research article corpus,* [M4-Product] *and suggests specific grammatical resources which might form the subject of tasks from which students could benefit.* [M5-Conclusion] (Parkinson, 2011)

As can be seen in the above abstract, some moves are fused together in one sentence, such as the Purpose (M2) and the Method (M3), the Product (M4) and the Conclusion (M5).

In 17 abstracts (85%), move 1, or move 4 are the place of research promotion – they contain the so-called "promotional statement" (Hyland, 2000, p. 76). Most often this statement highlights interesting nature, novelty or usefulness of the research, or a gap in previous research, justifying, in this way, the about-to-be presented research. Below are examples of such promotional statements:

a) *Previous genre studies have only referred to the use of literature in one move in discussions …* (Samraj, 2013).

b) *Although language training in Philippine call centers continues to improve* (Lockwood, 2012), *there are still clear limitations to how the oral performance …* (Friginal, 2013).

c) *There is, however, little consensus around what intelligence actually means and how the construct should be applied* (Lester & Gabriel, 2014).

Although, generally, the identification of each move in the corpus was uncomplicated, distinguishing the boundary between the Product move (M4) and the Conclusion move (M5) caused some problems. In order to solve this problem, it was assumed that the moves that provide the results (that is, what was found) and those which summarize briefly the main findings of the research together with their generalization were categorized as the Product. See the examples below:

d) *The results of this study show that intertextual links are used for a variety of rhetorical functions throughout discussions in master's theses and journal articles* (Parkinson, 2011).

e) *The texts analyzed and the auditors observed and questioned show that, although the use of templates is widespread, there is, in fact, some original writing involved in drafting the reports … The study also finds that although the reports are written in English, a mix of languages (English, Cantonese and Putonghua) is used by the members of the audit team in their production* (Flowerdew, J., 2010).

On the other hand, those moves that discuss the research by evaluating the findings and/or relating the reported research to the broad context, were categorized as Conclusion, as in the following example:

f) *The implications of the findings are highlighted, with suggestions on how language trainers can focus on particular sections of the audit report in order to help auditors write better. The overarching conclusion of the paper is that the linguistic and contextual approaches to genre analysis can complement each other effectively* (Flowerdew, J., 2010).

With regard to the sentence opening an abstract, Swales and Feak (2009, p. 10) distinguish four basic types of sentences opening an abstract: (A) sentences about real-world phenomenon or standard practice, (B) sentences informing

about purpose or objective of the work, (C) sentences presenting the researcher's action, (D) sentences indicating a problem, uncertainty or a gap in the knowledge.

In corpus A, there is quite a wide variation of the opening sentences. The largest number of abstracts, 11 (55%), are opened with sentence type C, for example:

In this paper I use two case studies to show how corpus linguistics is used to help in the teaching of business English (Walker, 2011).

Slightly less abstracts, 7 (35%), are opened with sentence type A, as in the example:

The use of source texts in academic writing has been explored in at least two groups of EAP studies ... (Samraj, 2013).

One abstract (5%) begins with sentence type B, see the example:
This article has four aims ... (Stokoe, 2012).

Also, one abstract (5%) is opened with sentence type D, for example:
Writing the Discussion section of a laboratory report or dissertation is difficult for students to master (Parkinson, 2011).

Linguistic features characteristic of abstracts in corpus A are:

1) The promotional aspect of the abstracts is expressed by linguistic items such as: conjunctions *however*, *although;* adjectives *little*, *unclear*, *novel;* nouns *limitations*, *conflict*.

2) The verbs in the Introduction and Purpose moves are usually in the Present tenses: the Present Simple and, less frequently, the Present Perfect tense, in the active voice. The predominant tense of the verbs in the Method moves is Simple Past in the passive voice, and in the Product and Conclusion moves – the Present Simple tense in the active voice.

3) Personal pronouns in the first person (*I, we, my, our*) are numerous.

4) Presentation verbs, such as *investigate*, *explore, examine, discover, discuss, provide, present* are used to mark the Purpose move, and verbs such as *show, demonstrate, reveal, suggest* are used to indicate the Product move, for example:

This case study discusses the development and use of an oral performance assessment instrument intended to evaluate ... [Purpose-M3]

Results from corpus examples show that as in MICASE, 'just' occurs most in academic spoken English as a minimizer or mitigator across all four disciplinary groupings, often in metadiscursive or 'teacher talk' frames. [Product-M4]

5) Metadiscourse markers are infrequent in the investigated abstracts; the most common are transitions (conjunctions *and*, *but*, *however*, *although*), hedges (modal verbs *may*, *might*, *can*, *would*, the verb *suggest*), and boosters (the verbs *show*, *demonstrate, must*). Hedges and booster are the most numerous in the Product and Conclusion moves.

According to Swales and Feak (2009), the significance of the findings in the Product move may be highlighted or weakened by the choice of verbs in the main clause, for example, the verbs *demonstrate*, *show* strengthen the claim, whereas the verbs *suggest*, *indicate* – weaken it. In corpus A, verbs strengthening the findings prevail.

5.2. Analysis of abstracts in corpus B

Corpus B includes 20 abstracts written in English by NNSs, that is, Polish authors, with a total of 3416 words. The abstracts come from articles published in leading Polish science journals such as *Studies in Polish Linguistics*, *Linguistica Silesiana*, *Studia Linguistica Universitatis Iagellonicae Cracoviensis*, *Studies in Polish Linguistics*. One half of the abstracts in corpus B, contrary to corpus A, are of the indicative type (they provide the aim and method, but no results), and the other half are informative (they additionally provide the results).

In this corpus, as in corpus A, the opening sentences are of various types. Seven abstracts (35%) begin with sentences type C, describing the writer's action and/or the structure of the article, for example:

This paper undertakes an analysis of the connotative meanings of Polish diminutives ... (Biały, P., 2013).

Next in amount, six (30%), abstracts are opened with sentences type B, providing the purpose of the article or the study, as in the example:

The purpose of the following study is to examine how the two modes of interpreting ... (Gumul, 2012).

Four abstracts (20%) begin with sentences type A, providing real-world phenomenon, for example:

Bilingualism has long been observed in Silesia (Wieczorek, 2011).

Opening sentences of the type D occur in three (15%) abstracts, indicating the existing problem, as in the example below.

Questioning in class is often found by students to be highly stressful and a cause of anxiety (Pakuła-Borowiec, 2013).

Seven (35%) abstracts contain promoting statements which justify the necessity of investigating into some problem. Below are examples of such sentences:

So far little attention has been paid to the corpus analysis of recurrent phraseologies found in Polish texts (Grabowski, 2014).

This paper offers a novel analysis of the impersonal constructions marked with -no/-to in Polish (Ruda, 2014).

The number of abstracts containing particular rhetorical moves is presented in Table 4.

Table 4. Frequency of occurrence of moves in corpus B

Moves	Frequency
1. Introduction (background)	8 (40%)
2. Purpose (objectives)	19 (95%)
3. Method (materials/subjects/procedures)	16 (80%)
4. Product (findings)	7 (35%)
5. Conclusion	2 (10%)

Table 4 shows that the most frequent are the two-move abstracts, composed of the Purpose move (M2) and the Method move (M3), giving the dominant pattern of moves in corpus B: M2-M3. Below is an example of a linguistics RA abstract from the journal *Studies in Polish Linguistics*, showing the most frequent structure composed of two moves (the boundaries are marked in square brackets).

Abstract

The aim of the paper is to discuss the Manner/Result Complementarity (Levin and Rappaport Hovav 1991, 2006) as one of the restrictions on the construal of lexical meaning at the level of lexicon-syntax interface from the perspective of Polish. [M2-Purpose] *The investigation of the manner/result complementarity provides good ground for the analysis of the nature of the relationship between the lexical meaning of a verb and the associated syntactic projection of a verb phrase. The investigation of Polish examples in the paper is presented as a test for the cross-linguistic validity of the complementarity. In the course of the discussion, the role of morphological marking is integrated into the analysis as reflecting the lexicalization pattern of Polish result verbs.* [M3-Method] (Biały, A., 2013).

As in the abstracts in corpus A, it was extremely difficult to distinguish between the Product move and the Conclusion move, as shown in the example below.

The distributional and interpretational properties of the construction ... suggest that the impersonal subject is best analyzed as a minimal pronoun, whose Case feature is unvalued/absent in the narrow syntax (Ruda, 2014).

Linguistic features characteristic of abstracts in corpus B are as follows:

1) The promotional statement of the abstract is expressed by lexemes such as: negative forms *never described*, *none of them*, *there have been no studies*; conjunctions *however*, *although;* adjectives *little attention*, *novel analysis*; nouns *the lack of corpus*.

2) The verbs in almost all the moves are in the Present Simple tense, even the findings in the Product move are in the Present tense. The predominant form of the verbs is the passive voice.

3) There is a total absence of personal pronouns.

4) Presentation verbs in this corpus used to mark the Purpose move are more diversified than in corpus A, and include: *discuss*, *present*, *undertake*, *explore*, *examine*, *evaluate*, *analyze*, *offer*, *highlight*, *investigate*, *aim*, *pro-*

vide. The verbs used to indicate the Product / the Conclusion are *show, reveal, suggest*, *contribute*, *observe*.

5) Metadiscourse markers are less frequent than in corpus A, and include transitions (conjunctions *but*, *while*, *although*), hedges (modal verbs *may*, *can*, *would*, the verbs *seem*, *suggest*), and boosters (the verbs *show*, *demonstrate*). As in corpus A, hedges and boosters are the most numerous in the Product and Conclusion moves.

5.3. Analysis of abstracts in corpus C

Corpus C consists of 20 abstracts written in the Polish language by Polish authors. The total number of words is 2058. The abstracts were extracted from articles published in domestic science journals, issued by Polish universities, such as: *Niejedno ma imię. Prace językoznawcze Instytutu Filologii Polskiej*; *Językoznawstwo. Prace naukowe Akademii im. Jana Długosza w Częstochowie*; *Słowo. Studia Językoznawcze*; *Etnolingwistyka. Problemy Języka i Kultury*; *Acta Neophilologica, Znaczenie tekst kultura, Prace językoznawcze Instytutu Filologii Polskiej*. The vast majority of abstracts are of the informative type. Unlike in corpora A and B, in this corpus the abstract opening sentences are less diverse – they are of only two types. Sentences of type C open twelve (60%) abstracts, for example:

Autor podejmuje próbę porównawczego opisu pojęć „wolność" i „praca" w językach japońskim i polskim (Koji, 2012).

Sentences of the type B open eight (40%) abstracts, as in the example below:

Celem artykułu jest rekonstrukcja konceptu „слоьода" w języku serbskim w oparciu o dane ankietowe i ich interpretację w nawiązaniu do szerokiego kontekstu kulturowego (Grygiel, 2013).

The striking difference between abstracts in corpus C and corpora A and B is that the promoting statement is present in only one abstract. See the following example:

Jest ono [badanie] *doniosłe dla języka, jak również dla świadomości i mechanizmów poznawczych człowieka.*

The frequency of occurrence of particular moves in abstracts in corpus C is shown in Table 5.

Table 5. Frequency of the occurrence of moves in corpus C

Moves	Frequency
1. Introduction (background)	2 (10%)
2. Purpose (objectives)	19 (95%)
3. Method (materials/subjects/procedures)	16 (80%)
4. Product (findings)	7 (35%)
5. Conclusion	2 (10%)

The moves in this corpus fulfil the same functions as the moves of the abstracts in corpora A and B, so there is no need to present them again. The most frequent moves in the abstracts of this corpus are the Purpose and Method – similarly to the abstracts in corpus B, therefore, the dominant pattern of abstract structure in this corpus is M2-M3. In the abstracts in this corpus, it was difficult to determine the borders between moves; they were no lexical means signaling them, so the moves were defined using semantic clues.

The abstracts in corpus C are characterized by the following linguistic features:

1) The overwhelming majority (90%) of sentences (those presenting the aim of the work, the researcher's action, the method, and the findings) are in the Present tense, in the active voice or agentless impersonal passive constructions ending in *-no* / *-to*.

2) The sentences indicating the writer's activity are either active voice sentences, with the subjects being the animate nouns, *autor*, *autorka*, or inanimate nouns *the study* or agentless passive voice sentences with the verbs ending in *-no*,*-to*.

3) The diversity of presenting verbs in corpus C is similar to corpora A and B. Here are some of them: *rozpatrywać*, *podejmować próbę*, *przedstawiać*, *omawiać, stanowić próbę.*

4) Metadiscourse in the abstracts in corpus C is most frequently represented by such categories as transitions (conjunctions *natomiast*, *jednakże*, *tym samym, choć/chociaż*, *zaś*, *ponadto*), boosters (adverbs *zdecydowanie*, *wyraźnie*), hedges are less numerous in this corpus than in corpora A and B and are represented by single occurrence of two words (*powinien*, *możliwie*).

6. Summary of the analysis and pedagogical implications

The presented above qualitative and quantitative, cross-cultural and cross-linguistic analysis of rhetorical structure of moves and linguistic features of linguistics RA abstracts written by Anglo-American and Polish writers has revealed both similarities and differences. The rhetorical structure of moves in the abstracts in corpora B and C is fundamentally similar; however abstracts in all three corpora show deviation, to various extent, from Hyland´s reference model (see Table 1). The moves present in the RA abstracts fulfil the communicative functions defined in this model, that is, inform the readers of the research in a specified context, justify the necessity of conducting the research to be presented, indicate the applied method, provide the outcomes and conclusion. Table 6 shows the comparison of the percentage of rhetorical moves present in the three corpora studied in this article.

Table 6. Frequency of occurrence of rhetorical moves in the abstracts of the three corpora

Type of moves	Corpus A	Corpus B	Corpus C
1. Introduction	11 (55%)	8 (40%)	2 (10%)
2. Purpose	20 (100%)	19 (95%)	19 (95%)
3. Method	20 (100%)	16 (80%)	16 (80%)
4. Product	19 (95%)	7 (35%)	14 (70%)
5. Conclusion	15 (75%)	2 (10%)	2 (10%)

As can be seen in Table 6, the rhetorical pattern of the majority of abstracts in corpus A is M2-M3-M4-M5, and in both corpora B and C – M2-M3. Such findings are in line with those of Santos's (1996) with the Purpose move (M2) and the Method move (M3) occurring in almost all the abstracts while the other two moves, the Introduction move (M1) and the Conclusion move (M5) occurring less frequently.

The greater deviation from the standard has been observed in the abstracts written by Polish authors both in the English and in Polish languages. In both corpora B and C, 90% of abstracts are lacking the Conclusion move, and 90% of abstracts in corpus C are lacking the Introduction move. Frequently, in all the corpora, because of the limited space allocated for abstracts, two moves are merged together in one sentence.

In a number of abstracts in the analyzed corpora, some variation in the conventional move sequence has been observed. This is caused by embedding one move in another, for example, move 2 is frequently embedded within move 3, or by post-posing the move, for example, move 1 is post-posed after move 2 or 3. Santos (1996, p. 492), who noted this variation, referred to the embedded move as a "hybrid move". Pho (2008, p. 238) also noted the flexibility of the position of moves in his study and stated that, "the methods of the study can be expressed in a participial phrase at the beginning of a sentence presenting the research."

One of the most important statements in the rhetorical moves of the abstracts is the promotional statement (Hyland, 2000, p. 75), in which the authors underline the importance of the topic, encouraging, in this way, the readers to further reading into the article to learn more about the problem, and publishers of science journals to publish the article. This promotional sentence is present in 85% of abstracts written by Anglo-American writers, whereas only in 35% of abstracts of Polish authors written in English, and in only 5% of abstracts written in Polish. It seems that Polish authors who ignore providing the motivation for writing their topic, believe that it is important enough to attract a good deal of attention in their discourse community. Another possibility of not following by Polish authors the conventional rhetorical justification of their study is culture-based, which means that in the Polish culture, scientists are not encouraged to promote their ideas. Nevertheless, the inclusion of this statement in an abstract serves to

emphasize the value of the article, and may contribute to its acceptance by the target community and by the publishers of prestigious international journals.

In all three corpora, the Present tense dominates in all the moves, with the exception of the Method move, which in some abstracts in corpus A is in the Past Simple tense. In Polish RA abstracts there is significant prevalence of agentless passive sentences and active sentences with an inanimate subject over 'I/we-subject' sentences, frequently occurring in Anglo-American abstracts. Native English writers, contrary to non-native Polish writers, are willing to mark their presence in the text by the use of personal pronouns in the first person 'I' 'we', 'my', 'our' when writing about their own decisions and activities. In this way they highlight their contribution to the presented study.

To illustrate how the metadiscourse items are used to facilitate effective writer-reader interaction in the RA abstracts in the three corpora studied, I searched the texts of the abstracts in all the corpora with the use of a concordancer, *MonoConc Pro 2.2*. I also analyzed the texts manually to check whether the words or expressions found by the concordancer functioned as metadiscourse items. The importance of metadiscourse in RA abstract writing is expressed by their occurrence in these texts – there were 139 metadiscourse items in the 3351-word corpus A, 140 items in the 3416-word corpus B, and 37 items in the 2058-word corpus C, which gives a frequency of one discourse item every 24 words in corpora A and B, and one every 56 words in corpus C. It means that the frequency with which metadiscourse items occur in corpora A and B is the same, while it is significantly lower in corpus B.

The comparison of the frequency of occurrence of metadiscourse markers in the RA abstracts in corpora A, B and C is shown in Table 7.

Table 7. Frequency of metadiscourse in RA abstracts in the analyzed corpora

Metadiscourse category	Corpus A		Corpus B		Corpus C	
	#	rounded %	#	rounded %	#	rounded %
Interactive	78	54	77	54	23	63
Transitions	11	8	2	1	2	5
Evidentials	8	5	24	17	3	8
Code glosses	6	4	7	5	4	10
Frame markers	8	5	9	6	0	0
Endophoric m.	45	32	35	25	14	40
Interactional	63	46	65	46	18	47
Hedges	18	13	24	17	4	10
Attitude m.	4	3	6	4	3	8
Self-mentions	16	12	14	10	3	8
Engagement m.	2	1	0	0	0	0
Boosters	23	17	21	15	8	21
Total	141	100	142	100	41	100

Table 7 shows that in the analyzed corpora, containing NSs' and NNSs' abstracts written in English and in Polish, there is the same percentage of interactional categories with the most numerous boosters. There are significantly more hedges and self-mentions in corpora A and B than in corpus C. It means that both NSs and NNSs writing in English are more willing to tone down their assertiveness in expressing their opinions, and are more willing to highlight their presence in the study than the Polish researchers writing in Polish. It indicates that Polish writers, particularly those writing in Polish, adversely to Anglo-American ones, do not tend to promote their identity in their research claims, instead they prefer to use impersonal forms of verbs and agentless passive voice, which gives an impression of a highly objective scientific style. Within interactive categories, which are more numerous in corpus C, the most frequent are endophoric markers, used to refer to the article which follows.

Students commonly do not possess the appropriate competence and skills to create academic texts according to the conventional standards of written academic discourse. Therefore, they should be provided by their teachers with the explicit knowledge of the conventions of RA abstracts writing. Teaching rhetorical and linguistic features of a research article abstract effectively, a genre-centred, corpus-driven approach to text analysis can be advocated. This approach has been employed in applied linguistics since the early 90s of the past century. The teaching of RA abstract writing should be based on the specialized corpus composed of original research article abstracts, written by native speakers of English, published in highly-indexed science journals. The abstracts should be then analyzed by students with the reference to a model, as proposed by Hyland (2000) or Swales and Feak (2009), under the supervision of the teacher, providing instructional explanatory feedback. To help the students conduct the analysis of the rhetorical organization and lexico-grammatical elements, I suggest the analysis of abstracts guided by the following tasks.

Task 1. Answer the following questions with the reference to the provided corpus.

1) Which is the most frequent opening move and what is its function? What tense is used in this move?
2) What comes first in the Introduction (background) move in your corpus: the statement of current knowledge in the research area or the statement of a problem (uncertainty) to be solved?
3) How does the writer justify the necessity of the research/idea being reported? What does he/she underline: benefit, importance, or novelty of the reported research/idea?
4) What information does the Method comprise? In what tense is it presented?
5) How is the Product move organized? Are the general or specific findings given? In what tense is it presented?

6) Is the Conclusion move present in all the abstracts? If it is, what information does it provide?

Task 2. Insert the sentences from particular moves into a proper box in Table 8.

Table 8. Examples of sentences extracted from the moves of the abstracts written by NSs of English

Move	Abstract 1	Abstract 2	Abstract 3
1. Introduction/ Background	The use of source texts in academic writing has been explored in at least two groups of EAP studies …	A key concern for writers is the creation of cohesion in a text … However, previous corpus-based investigations …	No Introduction
2. Purpose/ Objective	… this article explores the functions of source text use in the discussion sections of master's theses …	This study was designed to determine …	… this study highlights the respective roles of linguistic and contextual analysis …
3. Method / Materials	… using two typologies, one created by Thompson (2001, 2005) and, the second, an expanded model …	… the demonstratives this and these are used with the goal of understanding how expert writers …	*… the study explores how communicative purposes are achieved through the systematic …*
4. Product /Findings	… the results of this study show that intertextual links are used for a variety of rhetorical functions …	The results of the study indicate that pronominal uses of this/these …	… show that, although the use of templates is widespread, there is, in fact, some original writing involved …
5. Conclusion	… the results of this study show that intertextual links are used for a variety of rhetorical functions …	No Conclusion	No Conclusion

Teaching students how to write a grammatically proper abstract requires raising their awareness of the important lexico-grammatical features which are used in this genre. By finding the occurrence of various linguistic features in the analyzed by students abstracts, they gain a proper understanding of lexical and grammatical standards that are valid in the RA abstracts in their discipline.

Task 3. In the table, mark the linguistic features occurring in particular moves of the analyzed abstracts.

Table 9. The linguistic features found in particular moves of the analyzed abstracts

Linguistic features	Introduction	Purpose	Method	Product	Conclusion
Present tense	X	X			X
Past tense			X	X	
Passive voice	X		X	X	X
Active voice		X			X
modal verbs				X	X
We, our		X	X		X

To make students aware how metadiscourse markers function, I suggest abstract analysis together with the tasks, as proposed by Hyland (2005, pp. 186–188).

For Polish researchers, publishing in international journals is challenging since they come from a context where the conventions and expectations of academic discourse may be different from those in the target academic settings. The teaching of academic writing, therefore, needs to focus not only on genre rhetoric conventions and lexico-grammatical-related problems, but also, as Johns (1997) claims, "To produce effectively a piece of writing, students also need knowledge of the culture, circumstances, purposes and motives that prevail in particular academic settings. This includes an understanding of the particular academic contexts."

7. Conclusion

The presented here analysis gives rise to the conclusion that conventionalized features of a specific genre employed in Anglo-American academic culture, and the requirements of the publishers of leading international science journals require from the author the production of abstracts which are coherent, logically organized in terms of rhetorical structure, lexico-grammatical items, and metadiscourse. Publishing RAs in prestigious international journals is a challenge for Polish authors who have to write for a culturally and linguistically different target society. Nevertheless those researchers who want to publish their articles in the English language have to, as Duszak (1997, p. 37) states, alienate from the culture of their own academic society and adjust to standards of the target Anglo-American community. The adaptation to these standards, in terms of the structure of rhetorical moves and the use of metadiscourse markers, decides on the acceptance or rejection of a given research article by the target society as well as by the publishers of science journals. Therefore, equipping students and junior researchers with the knowledge of rhetorical organization, lexico-grammatical features,

including metadiscourse items, of the abstract is essential for their future career in academy.

The findings of this study, and the performance of genre analysis coupled with the appropriate learning tasks may help Polish students and researchers better understand the rhetorical and lexico-grammatical organization of RA abstracts in the discipline of linguistics. By being aware of the generic conventions of rhetorical organization, as well as the expectations, in this respect, of the target community, Polish students and writers can, it may be argued, increase their chances for publication and thereby becoming effective participants of the international academic discourse communities.

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Appendix

1. Linguistics Abstracts by native-English writers (corpus A)

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