mgr Dagmara Kotowicz

Summary

Without a doubt, there has recently been an increase in the linguists' interest in the research into specialized languages. It may be due to the fact that the world has become a global village thanks to the rapid development of communication and information technologies, which has to some extent made it easier for people coming from different countries and cultures to communicate with each other. Specialists not only exchange professional information and knowledge during international meetings such as academic conferences, trade fairs, business negotiations, but they also communicate with each other via the Internet – e-mails, instant messengers and even social networking sites. They also have access to and make use of foreign specialist literature, e.g. scholarly monographs, academic journals. What is more, we witness a high demand for specialists with both professional knowledge and a command of a foreign language, especially a specialized foreign language.

As a consequence, linguists have faced a twofold problem – didactic and linguistic. They have started to deal with the methodology of teaching specialized languages in order to develop effective didactic techniques and tools, but they have also become interested in the linguistic analysis of specialized languages. They have analyzed both the terminology of particular specialized languages and of particular disciplines, and also grammar and those aspects of grammar which are used in writing specialized texts in a given language.

One of the specialized texts is a research article, in which a scientist-researcher presents his scientific research together with its description and results. In order to correctly write such an article, one has to know its formal macrostructure, namely the essential segments that it consists of. These commonly are: *Abstract, Introduction, Material and methods, Results* and *Comment (Discussion).* Apart from that, it is necessary to know the linguistic resources that are typical of the scientific style and scientific text.

Thus, the linguists' interest has focused on linguistic resources, not only those used in order to convey objective and factual content, but also those which constitute *metadiscourse*. The notion of *metadiscourse* covers different categories by means of which we can differentiate between two basic functions of advance organizers. The first one comprises the cases when 'a text speaks about itself', in other words when a metatext, by means of advance organizers, helps the reader to move around the text by giving him hints as to how to interpret different text segments. The second one refers to interpersonal phenomena such as the

writer's attitude to his own knowledge, his emotional state, and also his attitude towards the reader (Duszak 1998: 135-136).

The main objective of the dissertation is to study the problem of writer-reader interaction in English and Polish medical research articles, to check whether it is present in the articles in both languages and how it is realized. The study is based on Hyland's interpersonal model of metadiscourse (Hyland 2005a), which comprises interactional resources such as *hedges*, *boosters*, *attitude markers*, *engagement markers* and *self-mentions*. Each of the above-mentioned categories undergoes a detailed analysis based on the corpus of medical research articles from different medical journals directed at doctors of various medical specialties.

The dissertation consists of two main parts: theoretical and empirical. The theoretical part comprises four chapters. **The first chapter** discusses the scientific language. It starts with the answer to the question "What is science?". Science, according to Gajda (2012: 183), is a kind of "human activity directed at producing and communicating knowledge". What is tightly connected with it is linguistic operations such as creating and receiving a scientific text. The author of a text learns about the world, gains new knowledge which he presents in a scientific text, making use of a pattern of a text, which he has in his language competence, and which belongs to the style tradition of a given community. The reader also learns about the world acquiring from a text information already gained. He is a special recipient able to receive scientific content. In most cases, it is a specialist in a given discipline, but it can also be a student, a university student or a beginning scientist, and when it comes to popular-scientific texts, it can be a non-specialist – a layperson (Gajda 2012 : 183-184).

Next, the dissertation discusses the types of scientific style. Because sciences are diversified in terms of their subject matter and methodology, we differentiate different sublanguages connected with individual types of science, e.g. the language of hard sciences, the language of humanities, the language of applied sciences, and within these sciences there is e.g. the language of mathematics, the language of physics, the language of linguistics. When it comes to the process of scientific communication, it can be realized through two channels: oral and written, thus Gajda (1990: 37) differentiates between oral and written sublanguages. Scientific communication is realized mainly through written scientific texts, whereas the oral form is present in the oral genres such as a lecture, a paper, a discussion. Another type of scientific style is based on the genological differentiation. Gajda (1982) presents 38 scientific genres including a research article, a dissertation, a study, a paper, a report, a summary, an encyclopedia, a dictionary, an essay, a review.

Taking into account the extent of abstraction, the type of science and people communicating, Gajda (1982: 101; 1990: 36-37) talks about the following scientific sublanguages: theoretical-scientific, practical-scientific, didactic-scientific and popular-scientific.

Using a language in science, we choose specific linguistic resources which acquire certain stylistic values. These values ascribed to stylistic categories are called *stylistic features* (Biniewicz and Starzec 1995: 400). The authors enumerate the following stylistic features: abstraction, logic, clarity, explicitness in presenting concepts, brevity, objectivity, formalness. To these stylistic features Gajda (1982: 112-113) adds: intellectuality, impersonality, non-emotionality, accuracy.

When we look at a scientific text, we immediately notice *terms*. These are lexical units which function as expert, scientific and technical notions. Gajda (1990: 64) mentions the most important criteria of the choice of terms: conceptuality, systemness, efficiency, functionality and language correctness.

One of the essential features of scientific language are also *borrowings* from foreign language terminology of different disciplines. These are most often borrowings from Latin, Greek, English, German or French (Biniewicz and Starzec 1995: 404).

Another linguistic marker of scientific style is syntax. Gajda (1990: 77-78; 2012: 188) claims that we can talk about „the grammar of scientific language as a professional variant of the grammar of the Polish language". It is seen in the selectivity of specific linguistic resources used in scientific texts. Such texts are usually elaborate complex utterances and the intellectuality of scientific texts is reflected in the prevalence of hypotaxis over parataxis. As far as the parts of speech are concerned, there are more nouns than verbs used in scientific texts, which can be explained by nominalization (Gajda 1990: 88-89). When it comes to the forms of the category of verb, what is most often used is the indicative mood (90%), the imperfective aspect (80%), the present tense (85%, mainly in the imperfective form) and the 3rd person Singular (60%), very often in an impersonal form. Impersonal constructions are very often used, since they help scientists to separate the doer of the experiment or study from the content of the text, and as a result they can demonstrate their observations in an objective way (Biniewicz and Starzec 1995: 408; Gajda 1990: 77-92; Gajda 2012: 188-189).

The structure of a scientific text is another issue that needs to be discussed. A scientific text is partitioned horizontally and vertically. The horizontal partition comprises paragraphs, chapters, subchapters, clearly marked by typographically diversified headings, digits and letters. (Gajda 2012: 189). When it comes to the vertical partition, next to the primary text

there is a secondary text, which is or is not included in the primary text. According to Gajda (1982: 155; 2012: 189), a secondary text can be a digression, a remark, an excursus, a citation, a footnote, bibliographic references and illustrative material.

The essence of a scientific language is also described in the functional view. It is a pragmalinguistic view, in which we go beyond discussing a scientific language in a semantic-syntactic and terminological way. What is added here is a new category, namely the category of scientific communication (Kołupajło 2014: 176 – 177).

The second chapter pertains to the typology of intellectual styles (saxonic, teutonic, gallic and nipponic) and their characteristics presented by Galtung (1981). '**Saxonic' style** is characterized by linearity – the line of argumentation must be direct, logical and must lead to a clear conclusion. Moreover, texts written by English speakers are symmetrical – the proportions between individual text segments are maintained. Such a text has to be easy to understand by a potential reader and the responsibility for that rests on the author. This style also encourages the writer-reader dialogue. **'Teutonic' style**, on the other hand, is characterized by digressiveness – moving away from the main line of argumentation in a longish excursus. That contributes to textual asymmetry – the difference in the length of individual text segments. Repetitions and spiral returns of the content are acceptable. We notice the idealization of knowledge, a scientific text should be difficult, which confirms the author's credentials. The style also discourages the writer-reader dialogue. **'Gallic' style** is characterized by linguistic artistry. Clarity and elegance of scientific disquisition are important, where there is balance and symmetry. However, the style tolerates digressions. Finally, **'nipponic' style**, tightly connected with Japanese culture, where the fundamental rule of conduct comprises respect for an authority, the preservation of established social relations and the sense of collectivity and solidarity. In the 'nipponic style' writers rarely form theories, but when it happens, the theory is discussed very carefully and tentatively, in a justificatory and apologetic tone. A Japanese scientist taking part in a scientific discussion merely conveys information, complements and/or explains it, and does not enter the polemic with other scientists (Galtung 1981; Duszak 1994; Duszak 1998; Clyne 1987; Siepmann 2006). This chapter also mentions Polish-English contrastive research on intellectual styles.

The third chapter is devoted to specialized languages. Here we find the answer to the question "What is a specialized language?", which is based on the anthropocentric theory of human languages presented by Grucza (1994) and Grucza (2009). They claim that as a rule there are only specialized languages of real specialists "constituting their immanent, integral and constitutive features – only about them (about their certain forms) we can say that they

fulfil specific functions, only they are real languages. On the other hand, we cannot say that real languages are generalizations of specialized languages, their idealizations, abstract models or specialized languages as such" (Grucza 2009: 20).

Grucza (1994: 23) calls specialized languages technolects. He claims that they exist only in the form of specific idiotechnolects and adds that "in this form they are specific components of the general lectal equipment of the brains of individual people". The linguist adds that functionally and ontologically technolects are independent entities only partially, which means that in many cases between them and individual general lects there is no clear-cut boundary. Besides, Grucza (1994: 20) thinks that technolects are in fact only certain skills, mainly in the form of a specific practical knowledge resource of individual people. Grucza (2009: 20) divides the entities called 'specialized languages' into two categories:

1. specific real specialized languages, in other words, languages of individual specialists (specialist idiolects), which are certain specific spheres of their knowledge, at the same time not being any independent entities,
2. general specialized languages (intellectual constructs and at the same time ideal models).

What comes next are the differences between a specialized language and a general language, also called natural or popular. Between the two types we can notice certain relations. A general language constitutes a base for a specialized language, since a specialized language makes use of phonemics, phonetics and grammar of a general language. A specialized language cannot function independently, although it is difficult to mark a boundary between a general language and a specialized language because the terms belonging to a specific technolect can with time become part of a general language. We cannot also state that specialized languages are variants of a general language, since, taking their functions into consideration, they are independent. It is noticeable in the inability of presenting specialized knowledge only by means of a general language, which is mainly caused by the differences in their lexis and textual patterns between a specialized language and a general language, and also in their complete independence in terms of the function. Furthermore, the differences between a general language and a specialized language are discussed on several levels: the level of function, syntax, semantics, morphology, word formation and lexis.

Striving for the systematizing of vocabulary, linguists working on specialized languages defined the notion of a *term*. Grucza (1991) describes a *term* as "a tool for human work, essential in the process of communication" and next he refers to terms as units which

represent or express meaning just like other words. For Lukszyn and Zmarzer (2001: 23) a *term* is a linguistic sign belonging to a given technolect and meaning "a notion in the system of semantic relations appropriate for a given lexicon'. In Lukszyn's definition in *Słownik terminologii przedmiotowej* (Lukszyn 2002) a *term* is defined as a linguistic sign in the form of a word or a phrase which belongs to specialized lexis and is differentiated from linguistic signs of a general language. In order to call a word or a phrase a term, it must be subject to specialization expressed in the specificity of users, situations and notions to which the term refers. What is more, it must be univocal, i.e. in a specific discipline it must mean only one idea or object. A term must be stylistically and emotionally unmarked, it cannot contain any expressive connotations.

The third charter also discusses the Anglo-Saxon approach to specialized languages, where the focus is on teaching these languages. Dudley-Evans and St. John (2012: 4-5) give the definition of **ESP** (*English for Specific Purposes)*, which is based on *absolute characetristics* and *variable characteristics.*

Absolute characteristics are:

- ESP is designed to meet specific needs of the learner,
- ESP uses the underlying methodology and activities of the disciplines it serves,
- ESP is focused on the language (grammar, lexis, register), skills, discourse and genre appropriate to these activities.

Variable characteristics are:

- ESP may be related to or designed for specific disciplines,
- ESP may use a different methodology from that of general English (in specific teaching situations),
- ESP is most often designed for adult learners studying at a tertiary level institution or in a professional work situation, but also for secondary school students,
- ESP is usually designed for intermediate or advanced students, but sometimes is also used with beginners.

ESP is divided by some linguists into two main categories: *English for Academic Purposes* (EAP) and *English for Occupational Purposes* (EOP). According to Johnson and Johnson's *Encyclopedic Dictionary of Applied Linguistics* (1999: 105-106) EAP refers to situations, mainly academic, and its main goal of learning a language is gaining the skills necessary in a chosen academic discipline, EOP, on the other hand, is useful for a career.

The chapter also deals with a specialized text and its typologies. First, the notion of a *text* is characterized in terms of de Beaugrande and Dressler's seven standards of textuality, which they presented in their book *Introduction to Text Linguistics* (1981/1990). They claim that a text is distinguished by its *textuality*, which is based not only on *cohesion* and *coherence*, but also on *intentionality, acceptability, informativity, situationality* and *intertextuality*. Then different definitions of a text are given, e.g. Zdunkiewicz-Jedynak (2013: 59) perceives a *text* as a "spoken or written sign structure above the sentence level, constituting an informational whole". Maćkiewicz (1999: 10) defines a *text* as "a set of sentences organized in a certain way which conveys information that, according to the author, is complete", de Beaugrande (1985: 47) speaks about "a natural language occurrence in a communicative setting", and for Halliday and Hasan (1985/1989: 10) the notion of a *text* means language which is functional and which is performing some task in some context.

A specialized text is for Zmarzer and Lukszyn (2001) „a specific macrosign – (…) a form of the representation of the terminological lexicon in an appropriate syntagmatic line according to the current rules of logical syntax", and Grucza (2008) in *Lingwistyka języków specjalistycznych* defines *specialized texts* as "any specific, spoken and written linguistic expressions which have been created by any specialist in any specific act of specialist communication". Zmarzer (2003: 25) then demonstrates Werlich's (1975) and Reiss's (1976) *typologies of specialized texts.* Next the linguist presents the typology of specialized texts in relation to the notion of *text* and briefly shows the essence of a text as a system of notions: *form – norm – meaning – intended use*. Hence the following types of specialized languages:

1. codified texts / unstructured texts (based on form),
2. standard texts / non-standard texts (based on the norm),
3. theoretical texts / practical texts (based on meaning),
4. hermetic texts / universal texts (based on intended use).

Zmarzer (2003: 31-32) also gives the typology of specialized texts based on specialist terminology, which includes terms used across all fields of science, interdisciplinary terms, specialist terms, borrowed terms, terminological neosemantisms, neologisms, internationalisms, professionalisms, etc.

Another division of specialized texts is one based on the degree of text terminologization, i.e. the ratio between conventional and general lexis. These are:

1. cumulative texts, e.g. terminological dictionaries,
2. explanatory texts, e.g. dissertations and academic handbooks,
3. exemplificative texts, e.g. popular science publications.

Lukszyn (2002: 54), taking into account the terminological character of specialized texts, distinguishes three basic types depending on the function they have: term consolidating texts (terminological dictionaries, dictionaries, encyclopedias, thesauri etc.), term using texts (e.g. technical, popular-scientific, journalistic, literary texts), term forming texts (theoretical texts).

Finally, a research article is described. To start with, different approaches to the notion of *genre* are discussed and then Swales's definition of *genre* (1990: 58) is given. The linguist claims that what characterizes *genre* is above all a set of communicative purposes which it has to fulfil. It is the communicative purposes that shape a given genre, in other words, they determine its schematic structure and influence the choice of content and style. Any change of a communicative purpose may result in a different genre. Bhatia (1993: 13) perceives *genre* in a similar way as Swales and stresses its fundamental feature, namely its communicative purpose. Moreover, he refers to a genre as a communicative occurrence with a conventionalized inner structure, which is well known not only to specialists of a given discipline but also to members of an academic community, who use the genre in their professional activity.

Next, based on Swales's works (2008, 2013), a structure of a research article is discussed. Swales (2008: 93) maintains that a research article "is taken to be a written text (although often containing non-verbal elements), usually limited to a few thousand words, that reports on some investigation carried out by its author or authors. In addition, the RA will usually relate the findings within it to those of others, and may also examine issues of theory and/or methodology. It is to appear or has appeared in a research journal or, less typically, in an edited book-length collection of papers".

The RA is characterized by a specific form and style. The use of the hypothetico-deductive method in an experimental-research paper contributes to a certain standardization of its basic structure or employing common units of discourse (Crookes 1986: 58). A lot of linguists have dealt with the macrostructure of the RA. Swales (2008: 133) mentions the following researchers: Stanley (1984), who proposed a *problem-solution* structure, Bruce (1983), who maintained that the most logical manner of demonstrating one's research is the *Introduction – Method – Results – Discussion* model, Hutchins (1977), who modified Kinneavy's cycle of *Dogma – Dissonance – Crisis – Search – New Model* (Kinneavy 1971).

The conventional and well-established structure of the RA is the **IMRD** model (*Introduction – Method – Results – Discussion / Conclusions*) (Yang i Allison 2004: 264-265). Working with this model, Swales (1981, 1990, 2004) demonstrated an analysis of RA introductions concluding that in the majority of the analysed articles the introductions were

organized in 4 moves: *introducing the field, reporting previous research, preparing for the present research* and *introducing present research*. Then in 1990 Swales (2008: 140-141) modified the model and presented a new model called **CARS** (*Create a Research Space*) consisting of 3 moves: *establishing a territory, establishing a niche, occupying the niche*, which was again modified in 2004, but the modifications merely pertained to individual steps in the 3 moves. Swales (2008) also discussed the other parts of the RA: Methods, Results, Discussions and Conclusions invoking the studies of individual researchers.

At the end of chapter three we find a review of the research on the RA. Among the linguists whose studies have been mentioned are: Bazerman (1988), Atkinson (1992), Salager-Meyer (1992; 1994; 1999), Vande Kopple (1998). Swales & Najjar (1987), Crookes (1986), Duszak (1994), Samraj (2002), Ozturk (2007), Lim (2006; 2010), Brett (1994), Thompson (1993), Hopkins i Dudley-Evans (1988), Peacock (2002), Basturkmen (2012), Yang i Allison (2004), Lorés (2004) Kanoksilapatham (2005), Cao i Hu (2014), Blagojević (2009), (Dahl 2004), Hyland (1996, 1998a).

The fourth chapter is entitled "Metadiscourse". At first, interaction in language is discussed alluding to the Russian philosopher and semiotician Mikhail Bakhtin, who was engaged in the dialogic character of language. According to Bakhtin (1981, 1983), dialogicity refers to both spoken and written language. It means that any text is a product resulting from the mutual relation of the addresser and the addressee, and the meaning of the text is shaped through the addresser's intentions and the addressee's interest present in a given context (Nystrand 1986: 33-35).

Every act of communication, both spoken and written, implies interaction between two participants: the addresser and the addressee (the producer and the receiver). Interaction is present in written language when the reader understands a written text, otherwise the failure to comprehend indicates an absence of interaction (Nystrand 1986: 39-40).

The *producer-receiver* relation is an element of the interpersonal function. This function together with the ideational and textual functions constitute three macrofunctions, which, according to Halliday (1973), are used by speakers of a language. (Vande Kopple 2012: 37-38). Next, there is a brief reference to the linguistic phenomena connected with the producer-receiver interaction. These are: **the Cooperative Principle** (the so-called Grice's maxims) (1975) and **the Conversational Implicature** related to it, then Leech's **Politeness Principle** (1983), Sperber and Wilson's **Principle of Relevance** (1986), Brown and Levinson's **Model of Politeness** (1987), and also Nystrand's **Reciprocity Principle** (1986).

What is also discussed in this charter is the way in which interaction is realized in a scientific text, since recently academic discourse has seized to be perceived only as an objective, informative piece of writing written in an impersonal style. Linguists noticed the writer-reader interaction, since scientists not only write texts explicitly presenting an external reality, but they also, by means of language, acknowledge and negotiate social relations with readers, since writing is a social activity embedded in a specific context and dedicated to a specific audience (Hyland 2010: 127-128).

In the next part of chapter four the notion of *metadiscourse* is elaborated on. Its definitions are presented in relation to individual linguists such as Crismore (1983), Williams (1981), Vande Kopple (1985, 2002, 2012), Aguilar (2008), Hyland and Tse (2004), Hyland (2005a, 2010), Markkanen et al. (1993). A lot of linguists treat metadiscourse as *discourse about discourse* (Crismore 1983; Williams 1981a; Vande Kopple 1985; Aguilar 2008). Vande Kopple (1985: 83) clarifies that by referring to two levels of discourse. On the first level we expand propositional content, on the second level (the level of metadiscourse) we help our readers to organize, interpret and evaluate the content. Wierzbicka (1971: 106) refers to a text as a *doubletext*, which consists of a statement about a thing (primary text) and a statement about the statement (metatext / metadiscourse).

Hyland (2005a: 16), on the other hand, claims that defining *metadiscourse* as *discourse about discourse* is incorrect, since this definition limits its role only to the text itself. *Metadiscourse* is something more than just linguistic resources by means of which we organize our thoughts. It is also a way of approaching our readers. *Metadiscourse* rests on the social and communicative relation between the producer and the receiver and pertains to the ways by means of which the producer projects himself into his discourse to express his attitude towards both the content and the audience of the text. What is used here is a wide variety of linguistic resources that a writer applies to organize his texts, engage the reader and help him to correctly interpret the text (Hyland and Tse 2004: 156).

Next different models of metadiscourse are presented: the models of Williams (1981), Meyer (1975), Crismore (1983), Vande Kopple (1985), Crismore and Farnsworth (1990), Crismore, Markkanen and Steffensen (1993), Ädel (2006, 2010), Ädel and Mauranen (2010), Hyland and Tse (2004) and Hyland (2005a). The study in the dissertation is based on part of Hyland's model of metadiscourse (Hyland 2005a), which the linguist divided into **interactive resources** (pertaining to textual metadiscourse) among which there are the following categories: *transitions*, *frame markers*, *endophoric markers*, *evidentials*, *code glosses* and

interactional resources (interpersonal metadiscourse) which include the following categories: *hedges*, *boosters*, *attitude markers*, *engagement markers*, *self-mentions*.

Finally, the current studies into metadiscourse in English linguistics and the studies into metatext in Polish linguistics are presented.

The fifth chapter (the empirical part) of the dissertation contains the description of the study of writer-reader interaction in selected medical articles in English and Polish. The study is based on the part of Hyland's model of metadiscourse (Hyland 2005a) that pertains to interpersonal metadiscourse. The research material includes the corpus of 150 medical articles in English and 150 medical articles in Polish derived from medical journals. The research method used in the analysis is the qualitative method. The analysis consisted in finding, selecting and recording examples from the research material in both languages and then the examples were assigned to the correct categories of the interactional resources that are part of Hyland's model of metadiscourse (Hyland 2005a). Next the examples were analysed in terms of grammar and lexis. Apart from that, their functions in the RA were determined, i.e. the writer's intention of choosing a certain element for his text was discussed and the effect he wanted to achieve. Finally, the selected examples in the two languages were confronted with each other in order to demonstrate similarities and differences in the way writer-reader interaction is carried out in medical articles. It was also examined whether each of the five categories of the interactional resources of Hyland's model of metadiscourse (Hyland 2005a) was present in the analysed material, and additionally, by means of which linguistic resources the five categories were accomplished. On the whole, the analysis of the research material showed how writer-reader interaction in English and Polish medical articles was achieved.

The research material was analysed on the basis of the following interactional resources (Hyland 2005a: 52-54):

1. *Hedges* – these are expressions which convey the information about the writer's incomplete confidence in the rightness of his judgment.
2. *Boosters* – these are expressions by means of which the writer demonstrates his judgment with absolute confidence, without any doubt.
3. *Attitude markers* – these expressions show the writer's attitude towards his propositions. They can also refer to their positive or negative appraisal. Here the writer conveys emotions such as contentment, surprise, frustration, disappointment, etc.. Moreover, the writer speaks about his preferences, hope, he shows his agreement or disagreement, emphasizes the importance of certain matters and evaluates them.

4. *Engagement markers* – by means of these markers the writer explicitly addresses the reader with the aim of drawing his attention to certain issues or engaging him as a participant in the discourse through the use of the second person pronouns, the imperative mood, questions, personal asides and also through determining shared knowledge.
5. *Self-mentions* – they refer to the writer's presence in his discourse. The presence is expressed by means of the first person Singular and Plural personal and possessive pronouns.

As the results of the study have demonstrated, there are plenty of similarities in the way writer-reader interaction is realized in English and Polish medical articles. Each of the mentioned categories of the interactional resources is present in the research material. The differences pertain only to certain aspects of two categories, namely the category of *attitude markers* and the category of *engagement markers*. Among the linguistic resources indicating the writer's attitude towards his propositions, no examples have been found in the Polish medical articles with the expression *na szczęście* (*fortunately*), which implies the writer's contentment. Moreover, the authors of the analysed articles in Polish did not express their preferences towards certain aspects, they did not show agreement or disagreement with a certain issue, or they did not express their sceptical approach to a given problem. These issues have, however, been found in the analysed medical articles in English. As far as the category of *engagement markers* is concerned, the research material in English contained the use of the imperative mood of the verb *see*, which is the example of the textual act. Here the writer refers the reader to a particular part of the text. It is an example of engaging the reader into the writer's disquisition. On the other hand, no examples have been found in the research material in Polish in which the writer addresses the reader using the imperative mood.

The differences also pertained to individual linguistic resources, which was due to the given language and its specific lexis or grammar. For example, in English there is a verb *hypothesize*, but Polish does not have such a verb that would be its equivalent. To express the meaning of the English verb *hypothesize* the Polish language makes use of a phrase *stawiać hipotezę*. What is more, it was not always possible to find the equivalent of a certain word or phrase in the other language, but the most important task in this study was to demonstrate that a given category was accomplished in the analysed model and to state by means of which linguistic resources it was achieved.

When it comes to the grammar of the two languages, the differences are present in the passive voice. In Polish, beside the passive voice (e.g. *Ocena histologiczna* ***została***

przeprowadzona *zgodnie z klasyfikacją WHO – The histological examination has been carried out in accordance with WHO classification.*) the construction *-no, -to* is used (e.g. *Rozmazy* ***oceniano*** *w pracowni diagnostyki cytologicznej – The smears* ***were assessed*** *in the cytological diagnostic lab.*). In English, on the other hand, we use the passive voice formed with the verb *be + past participle,* e.g. *Blood pressure* ***was measured****.*

All in all, in the analysed medical articles in both English and Polish the writer was engaged in a dialogue with the potential reader and it was accomplished by means of linguistic resources belonging to individual categories of the interactional resources that are part of Hyland's model of metadiscourse (Hyland 2005a).