

# Semiolinguistic Organization of Academic Discourse on the Example of a Scientific Article Genre

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**Abstract:** The article discusses clusters of signs that constitute a scientific article as a genre of academic discourse. The problem of determining the status of academic discourse among other types of discourse within an academic environment (space) is discussed. The definitions of academic discourse are given, and the structural and semiolinguistic characteristics of this type of discourse are derived. Such types of signs of academic discourse are distinguished as structuronyms, contentonyms, processives, methodologems, resultatives, effectives, implicatives, constatives, prospectives, referentives (biographems and bibliographfems).

## Introduction

Communication in the academic environment presents interest to researchers in various branches of the humanities, and, especially, to teachers, methodologists, linguists, cultural scientists and communicators. For linguistic science, it is relevant to find out how this environment is organized, what its structure is, what groups and types of signs are involved, who are the agents and clients of the corresponding academic discourse. However, not all scientists recognize the existence of the latter: some believe that in the academic environment, communication is carried out through scientific discourse [18,19,21]; others believe that academic communication is supported through educational [5] or university discourses [1]. Others are of the opinion that within the chronotope of academic communication (higher education institutions – Academy, Institute, University) communication is carried out through pedagogical [9,11], methodical [23] and didactic discourses [20,13].

It seems that the truth lies somewhere in between: in an attempt of systematization and type identification of discourse frameworks in academic chronotope researchers admit the "synonymy" of discourses, which N. Kotunova described as a situation where "...the traditional use of the parameter 'subject' is not a sufficient reason for the terminological definition of the discourse, and this practice leads to unnecessary duplication of discourses" that "violates one of the relevant methodological principles formulated by W. Occam (One should not create new scientific terms without a sufficient reason)" [14].

Apparently, when determining the type of discourse that supports communication in the academic environment, one should focus primarily on the topos, within which this communication takes place, i.e. in the academic space (the Academy serves as an umbrella nomination for scientific organizations and educational institutions with the status of an Academy, Institute or University). The scientific and

educational potential of the academic environment is best conveyed by V. Dahl in the following definition of the Academy:

"ACADEMY – fem., Greek, a higher scientific or educational brotherhood and the institution itself; the society of scientists or artists united under this name for the benefit of science; an educational institution for young people. All Sciences are taught at the university equally; in academies one branch of science is specifically taught" [21].

As you can see, the academic space includes such functions as ensuring both the research process and the learning process using the achievements of methodology and, finally, the educational process. Academic discourse, thus, combines the goals that pursue scientific, methodical, didactic and educational discourses [10,11]. It should be noted that the notion of topos refers to a higher educational or research institution in which communication is carried out between scientists / teachers / researchers, between scientists / teachers / researchers and students / graduate students, and finally between students / graduate students.

### **Problem statement**

The aim of the article is to categorize the clusters of linguistic and non-linguistic signs included in the process of semiosis of academic discourse. The paper analyzes such signs and considers the peculiarities of their actualization in various genres of this type of discourse.

### **Development of the problem**

The first problem considered by scientists in relation to academic discourse is an attempt to define it and determine its status among other types of discourses.

Thus, I. Khutyz attributed institutional status to academic discourse and believed that it was "...a unique communicative process among experts in order to: 1) agree with the scientific community and at the same time 2) highlight their unique point of view. The first strategy involves the expression of shared knowledge and concepts, courtesy, modesty, respect for existing norms, etc. The formation of a new opinion in this scientific direction occurs, on the contrary, through the expression of the author's individuality, his (her) authoritative knowledge <...> Dialogic (or interactive) academic discourse is one of its most important characteristics" [23].

According to N. Smirnova, academic discourse is nothing but "...an integrated whole that arises in the course of academic communication at the level of a coherent text and is a unity of language/speech substrates" [22]. Academic communication by the same author is understood as "...a method/product of cooperation of speech consciousnesses of communicants and as a process of semantic perception and generation of academic discourse" [22].

Academic discourse is understood by L. Kulikova as "...a normatively organized speech interaction having both linguistic and extralinguistic plans, using a certain system of professionally-oriented signs, taking into account the status and role characteristics of the main participants in communication (scientists as researchers and/or teachers, as well as students in the field of university education), interpreted as a culturally marked system of communication" [22].

L. Kulikova, however, was criticized by V. Kopylova and A. Olyanich: "The term 'academic discourse' is clearly synonymous to the scientific one and is very blurred in the pedagogical sense: in our opinion, L. Kulikova's definition is an unsuccessful attempt to combine the incompatible – equal and unequal status of its participants (scientist / teacher; scientist / teacher and scientist / teacher; student / graduate student)" [8]. We believe that L. Kulikova is right because she adequately reflected the real situation concerning agents and clients of this type of discourse; we find confirmation of L. Kulikova's position in Ken Hyland's book [3], which gives the following definition of the term "academic discourse":

“Academic discourse refers to the ways of thinking and using language which exist in the academy. Its significance, in large part, lies in the fact that complex social activities like educating students, demonstrating learning, disseminating ideas and constructing knowledge, rely on language to accomplish. Textbooks, essays, conference presentations, dissertations, lectures and research articles are central to the academic enterprise and are the very stuff of education and knowledge creation. But academic discourse does more than enable universities to get on with the business of teaching and research. It simultaneously constructs the social roles and relationships which create academics and students and which sustain the universities, the disciplines, and the creation of knowledge itself. Individuals use language to write, frame problems and understand issues in ways specific to particular social groups and in doing these things they form social realities, personal identities and professional institutions. Discourse is at the heart of the academic enterprise; it is the way that individuals collaborate and compete with others, to create knowledge, to educate neophytes, to reveal learning and define academic allegiances. The academy cannot be separated from its discourses and could not exist without them. No new discovery, insight, invention or understanding has any significance until it is made available to others and no university or individual will receive credit for it until it has seen the light of day through publication” [8].

In his review of Hyland's book on academic discourse, Catherine Moran, Professor of applied linguistics at the University of Georgia (USA), noted the correctness of the author's point of view on the status of this type of discourse:

“Hyland establishes a working definition of academic discourse as ‘the ways of thinking and using language which exist in the academy’ (p. 1). As straightforward as the definition may superficially appear, unpacking it proves just how complex a concept it really is. Academic discourse is not just the language of the academy, but the ways of thinking and using language which exist in the academy. Hyland sells his interest in academic discourse in this chapter, arguing that the language of the academy tends to be afforded authority in society and is often viewed as the truth. This gives academic discourses an enormous amount of cultural power to influence political agendas as well as to shape the thoughts of society” [6].

Finally, D. Drozdova considered academic discourse to be inhomogeneous by its structure and believed that it included the following subtypes: pedagogical, didactic, scientific and educational discourses [4].

In our opinion, academic discourse is an inhomogeneous communicative phenomenon aimed at studying the phenomena of the material and social reality surrounding a person, systematization and generalization of the acquired knowledge about this reality in order to ensure the well-being of Homo sapiens in various spheres and the transfer of this knowledge to subsequent generations. The discourse under study has a complex semiotic structure and is updated within the framework of the corresponding academic topos or space (laboratory, experimental platform, polygon, discussion environment of the Internet, scientific journals, scientific forums – conferences, symposia, colloquiums, university lectures and seminars).

The genres of academic research discourse products are the linguistic and semiotic phenomena presented by scientific articles, conference presentations, opponents reviews on the dissertation research, reviews of scientific articles, monographs and reviews on them, dissertation abstracts, abstracts of scientific articles, texts of lectures, research reports, scientific reviews, abstracts. This article considers only the genre of the scientific article. Further articles will consider linguosemiotic of other above-mentioned products of academic discourse.

## **Materials and methods**

The material of this research is the text of the scientific article as one of the genres of academic discourse: Barry Lee Reynolds (University of Macau, Macau SAR, China) “The Effects of Target Word Properties on the Incidental Acquisition of Vocabulary Through Reading” (TESL-EJ, November 2016 –Volume 20, 3 [<http://www.tesl-ej.org/wordpress/issues/volume20/ej79/ej79a4/>]).

The methodology of our study is linguistic and semiotic principle, which allows us to consider the actualization of the academic discourse through the functioning of the triad "sign → word → text". This triune algorithm allows to provide:

- description of the quality of the academic environment signs involved in the process of communication during the process of scientific research;
- analysis of the meaning of these signs, i.e. analysis of the semantics of lexical nominations and other verbal complexes (stable phrases, phraseological units, paroemias) reflecting different types of academic interaction situations;
- study of the qualities of the communicative environment and conditions for the actualization of the meanings of signs corresponding to a number of needs implemented in the course of academic research and studies [8].

## Discussion

Academic communication environment can be considered as a complex category that covers the sphere of scientific communication, as well as the exchange of scientific information in society. In this case, academic communication includes not only formal communication (for example, a report at a scientific conference), but also informal (for example, informal communication after the conference on scientific topics). If we consider the media of written scientific information, it can be presented both in paper and electronic form. In this regard, it should be noted that the academic space of our time is extremely diverse.

It should be especially noted that the body of the analyzed article contains structural and content signs. The structuronym signs include:

- article title (The Effects of Target Word Properties on the Incidental Acquisition of Vocabulary Through Reading);

- author's details – surname, name, place of work, its location, e-mail address (Barry Lee Reynolds, University of Macau, Macau SAR, China; BarryReynolds@markumac.mo);

- a brief summary of the content of the article (Abstract), which indicates the main purpose and objectives of the study, briefly lists its results;

- introduction, in which:

- a) the problem is motivated (“In recent years, incidental vocabulary acquisition has continued to gain attention, with a large number of extensive reading studies investigating the effect variables have on the incidental acquisition of vocabulary through reading. <...> Although a review of the incidental vocabulary acquisition literature shows evidence that a number of these variables affect the incidental acquisition of vocabulary through reading, examining these studies individually reveals that many of the studies examined the effect of an isolated variable or its combined effect with frequency of exposure on acquisition without taking into consideration the possible effects of other moderating variables”);

- b) the purpose of the research is announced (“The core aim of the current study was to not only investigate whether a previously unexplored variable may affect the incidental acquisition of vocabulary through reading but in doing so also take into consideration the effects of previously investigated variables”);

- c) questions to be answered are raised (“More specifically, the following research questions are addressed: What combination of investigated variables (frequency, patternedness, length, cognateness, lexicalization) predicts the difficulty of incidentally acquiring vocabulary through reading? Is the incidental acquisition of vocabulary encountered while reading affected by patternedness of the context surrounding target words?”);

d) literature review, structured by research objects (Vocabulary Acquisition and Extensive Reading; Incidental Vocabulary Acquisition; Context; Cognates; Lexicalization; Word Length; Patternedness).

The semiotic "body" of the article is formed by the contentonym signs, i.e. the signs of the research article content itself. These include:

- methodologemes, i.e. the signs that reflect the methods and techniques of research and analysis adopted in the study; in this study, the author resorts to an experimental study with the participation of respondents – native speakers who study English as a native language, as well as non-native speakers of English studying it as a foreign language (Research participants – EL1 learners, EFL learners);

- processives (Procedures) in the article are marked as follows: “Before the experiment began, both the EL1 and EFL learners were given a detailed handout including directions regarding how to complete the reading task. They were unaware that their vocabulary acquisition would be assessed, because it was assumed that being made aware in advance that vocabulary would be tested could affect the attention subjects paid to vocabulary encountered in the text. Since this study seeks to investigate the incidental acquisition of target vocabulary through reading, the participants were asked not to consult references or discuss the novel contents with others”.

The obtained data analyzed by the author is also presented by the cluster of effective signs for data correlation (“Data Analysis: The meaning recall results were analyzed for both participant groups. In addition to Pearson correlations, multiple regression models of the data were found using the method of sequential regression. The assumptions of multiple regression were assessed. First, it was necessary to test for multicollinearity between the variables by looking for any high correlations; therefore, Pearson correlations were run for both the EL1 and EFL data”).

The semiosis of the analyzed scientific article also contains the clusters of the implicative signs that state the nature of the obtained data (“These results have several implications for pedagogy and research methodologies used for investigating the incidental acquisition of vocabulary through reading. First, the result confirms previous research showing that repeated encounters with vocabulary affects the likelihood of incidental acquisition; in addition, the positive effect repeated exposure to words in context has on acquisition can be further enhanced if the repeated words appear within self-selected texts”).

Section “Discussion and Implications” contains clusters of constative signs (“Correlations between patternedness and IF for both learner groups were not found to be statistically significant. Recurrent patterns of the surrounding context do not appear to have positively affected the incidental acquisition of target words. This conclusion was drawn through the analysis of vocabulary assessment data collected after reading. However, there is no way of knowing how the participants treated the target words or the recurring surrounding contexts while reading. With the advent of eye trackers, it is possible to conduct future research that gives a better picture of what happens when L1 and L2 speakers are exposed to unknown vocabulary through reading”).

Section “Further Study” contains clusters of prospective signs, indicating the need for further study of the problem (The current investigation was undertaken to determine whether several variables (i.e., frequency, patternedness, length, cognateness, and lexicalization) affected the incidental acquisition of vocabulary through reading by adult EL1 and EFL learners. Results indicated that frequency and cognateness had a noticeable effect on acquisition for both learner groups with frequency mattering more to the EFL learners. The results of the investigation provide support for the claim that reading can be a viable route for L1 and L2 vocabulary development. It is hoped that the current investigation can draw attention to the need of more research simultaneously investigating for the effects of multiple variables on the incidental acquisition of vocabulary through reading).

The article is concluded by the cluster of referentive signs which reflect the correlation of the article content with the grant (This research was partially supported by the Ministry of Science and Technology, Taiwan, R.O.C. under Grant No. MOST 103-2410-H-010-015). The author’s details are expressed by

referentive signs (biographems) (“Barry Lee Reynolds, Ph.D. is Assistant Professor of English Education in the Faculty of Education at the University of Macau, Macau SAR, China. After obtaining 13 years’ experience in teaching ESL/EFL in the USA and Taiwan, in 2016 he relocated to the University of Macau to devote himself to TEFL teacher training and research into subfields of Applied Linguistics including L1/L2 Vocabulary Acquisition, Vocabulary Translation, L2 Literacy Instruction, Educational Technology, and Pre-Service Teacher Training. His published work has appeared in TESOL Quarterly, Reading Research Quarterly, English Today, Applied Linguistics Review, Computers & Education, British Journal of Educational Technology, among others”) and the reference list is presented by referentive signs (bibliographems).

## Conclusion

In accordance with the logic of the scientific research within the academic discourse the analysis of the structure and content of a scientific article requires a semiotic (linguistic and semiotic) clustering, clearly structuring the stream of scientific knowledge, which is the main purpose of the academic communication taken as a whole. As shown by our study, the semiosis of the scientific article as one of the basic genres of academic discourse includes the following signs: structuronyms, contentonyms, processives, metodologems, resultatives, effectives, implicatives, constatives, prospectives, referentives. The latter are explicated in the form of biographemes and bibliographemes. Our future research will focus on the study of linguosemiotic in relation to other genres of academic discourse.

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