

SCTMG 2020**International Scientific Conference «Social and Cultural Transformations in the
Context of Modern Globalism»****HEDGING IN A SCIENTIFIC ARTICLE WRITTEN IN ENGLISH
AS A REASONING STRATEGY**

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Abstract

This article is devoted to the issue of the use of hedging as part of a scientific article on economics, whereby hedging is described as a communicative device and a pragmatic strategy. As discursive hedging markers, both hedges represented by lexical units and hedging constructions are analyzed. At the same time, the focus of the research interest of the authors is on the variety of hedging means and the functions performed by them, as well as the possibility of using hedging as a rhetorical resource, a key element in expressing epistemic modality, including the author's personal assessment as part of the "I" representation of an addressee in the text of the publication on economics. The study takes into account the trends in the conceptual understanding of a scientific text undergoing a series of transformations, through which a scientific text is understood not only as a source that presents factual information, but also as a result of research work, perceived through the prism of implicit communication with the addressee, rhetorical focus, intention to convince the recipient of reliability of provided information. In addition, this research is also intended to characterize the concept of "hedging" and to illustrate its implementation within the framework of scientific discourse with emphasis on such a pragmatic component of the text of a scientific article as the subjective-modal tonality of the given propositions, which allows emphasizing precisely the argumentative strategy by means of hedging in scientific text.

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Keywords: Discursive hedging markers, hedging, scientific discourse, scientific article on economics, argumentation strategy.



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1. Introduction

The conceptual role of hedging funds and their use as a pragmatic strategy for achieving effective argumentation in a text has been developed since the beginning of the 70s in the works of Lakoff (1973), as well as in the works of Hyland (1998). The process of actualizing this aspect within the framework of scientific discourse, which occurs as a result of the establishment of the “anthropocentric paradigm in humanitarian knowledge” (Temirbulatova, 2016), which is accompanied by the increase in interest towards this topic, is reflected in numerous studies that analyze the pragmatic aspects of representation new knowledge by an author of a scientific article (Dahl, 2008; Gorina & Khrabrova, 2017; Kim & Lim, 2015; Yang, 2013), as well as the manifestation of the role of extra-linguistic factors, including the form of implicitly expressed dialogue between an addressant and an addressee (Mikolajchik, 2019; Resche, 2015). In our study, the question of the use of hedging funds in the text of a scientific article is revealed with emphasis on the analysis of the communicative strategy used by an addressant in the argumentation process.

2. Problem Statement

In the modern scientific episteme that arose during the period of globalization and paradigmatic pluralism (Milostivaya et al., 2017), the interpretation of scientific text in general and scientific article as its main genre in particular undergoes significant modifications. At the same time, the scientific text is considered not only as a source that reflects factual information, but also as the result of a research communicative action, which can be considered as implicit interaction with the recipient of scientific knowledge, which has a rhetorical focus and also realizes the intent of the subject of scientific communication, aimed at the choice of an optimally effective way of convincing the recipient of a text of a scientific publication of the reliability of reported information on studied phenomena (Vold, 2006). In this regard, the issue of the connection of the understanding interpretation of ontological essence of a scientific text with its language parameters seems to be significant from the standpoint of language, among which such a pragmatic technique as hedging, including actively used in economic scientific texts. Its fundamental importance is based on the consideration of the factor of the presence of a recipient, whose role in obtaining and analyzing the transmitted knowledge is extremely important, including due to the possibility of communicating with a reader, entering into dialogue with him through the use of hedging tools in a text (Kim & Lim 2015).

For this reason, the problem of communicatively effective use by the author of scientific research of hedges and hedging constructions as tools for effective argumentation in his epistemic activity seems relevant (Vass, 2017), since the lack of a conceptual understanding of this technique can lead to its incorrect implementation in a text and inconsistency with the actual principles of construction discourse of the modern scientific community.

3. Research Questions

The subject of this study is the variety of discursive hedging markers (both individual hedges represented by lexical units and hedging constructions), which serve as one of the key components of the

argumentation strategy in the text of a scientific article on economics. The analysis of the hedging concept in this context is determined by the following factors. Firstly, the author of a scientific article, in view of the fact that academic writing does not work in a vacuum and requires consideration of professional consequences (Hyland, 1996; Lari et al., 2015), is also the addressant within the framework of an explicitly expressed dialogue with an addressee, thus involved in communication in scientific discourse, which, according to K. Resche, is one of the key elements in understanding hedging as a means of argumentation (Resche, 2015).

Secondly, the phenomenon of hedging metadiscursiveness is important, which is based on the possibility of expressing the opinions of the author of a scientific publication, giving them a certain modal tone, as well as assessing the scientific relevance and theoretical significance of the proposed conceptual propositions. In addition, the above mentioned aspects allow concluding that hedges and hedging constructions are able to serve as an epistemic modality in a text, which is an integral attribute of argumentation in the framework of scientific discourse.

4. Purpose of the Study

The purpose of this research is to study the concept of hedging in the framework of scientific discourse, which determines the following tasks: to determine the ontological status of the phenomenon of “hedging” using definitional analysis; to identify hedges and hedging constructions used in the text of a scientific article on economics, followed by a description of their role as markers of a personal assessment reported during scientific communicative activities, a rhetorical resource during the publication of scientific information, as well as means of expressing an epistemic modality and key elements of an effective argumentation strategy.

5. Research Methods

This study was conducted on the basis of scientific articles on economic topics taken from *Theoretical Economics*, the highly rated journal. A card-catalogue, extracted by the continuous sampling method, includes 153 units and consists of micro-contexts in the form of propositions with hedging semantics. It is analyzed using the inductive method with descriptive and distributive interpretation of discursive hedge markers, which makes it possible to study the use of hedging tools in a comprehensive way and cover the variety of functions performed by them within the context of scientific discourse.

It is necessary to note the importance of the use of contextual analysis in order to determine the specifics of the concept of “hedging” within the framework of scientific discourse, which allows identifying the fundamental aspects of the use of discursive hedging markers as a means of argumentation, representing the “I” of an addressee in the text, and also as a function of the ways of expressing the subjective-modal tonality in scientific communication.

6. Findings

The term “hedging”, basic for our study, was first introduced into scientific discourse and theoretically substantiated by Lakoff (1973), the American linguist, who, within the framework of this

concept, implied the use in the speech continuum of certain words called “hedges”, which, according to his opinion, implicitly suggest fuzziness, whereby blurring the semantics of the utterance is achieved. Subsequently, this concept is interpreted in a broader sense. Thus, Hyland (1998), within the framework of his polypragmatic model, defined hedging as a means of realizing a certain set of goals, among which he listed the weakening of the modal and pragmatic power of statements, giving them greater uncertainty, and encouraging a reader to respond, which generally serves to establish interpersonal communication between a reader and an author, as well as distancing an author from the propositions advanced by him, which in general is designed to reduce the responsibility for the proposition advanced and prevent possible criticism.

Analyzing hedging as a communicative strategy in the framework of scientific discourse, Gorina and Khrabrova (2017) in their work define this concept as a pragmatic device used by an author to reduce the categorization of judgments, soften the truth of his own statements in the case when there is no complete confidence in the provided information, especially “when referring to numerical values”. From this point of view, the function of hedging as an indicator of accuracy in scientific discourse, as well as “relevant rhetorical resource”, proposed by Temirbulatova (2017) seems relevant. Mikolajchik (2019) emphasizes such an aspect of the use of hedge expressions in the text of a scientific article, as the presentation of information in the form of an opinion, rather than an indisputable statement of an interpreted state of affairs, due to which an author can present not fully proven provisions with maximum accuracy and caution, making it possible to discover discussions on this issue.

Temirbulatova (2016) in the article “Scientific Text: Assessment, Disciplinary Context, Hedging” defines the concept of hedging as the ability to reflect the assessment of an author of a text using linguistic methods of representing the “I” of a researcher, which is a way of marking the author’s competence in the framework of the current scientific problems of discussion. Therefore, hedging as an effective resource for the assessment by a sender of a scientific text the opinions presented by him also helps to identify the degree of the confidence of an author in them, his orientation to a recipient’s perception of a text from the positions established by him, which reinforces the argumentation base, especially during the formulation of judgments containing new and relevant information.

Thus, in the framework of scientific discourse, hedging can be defined as the communicative strategy of an author of a scientific text, the use of which is determined by the need to reduce the categorization of statements and present the reported information as an opinion, and not as a statement of facts. In addition, hedging is the assessment of the reliability of a text from the position of a sender of a communicative act in a scientific discourse, and is also the attempt to enter into an implicit dialogue with a reader, including the purpose to convince him in the presented arguments and the accuracy of his own judgments. In addition, it can be used to distance oneself from a number of propositions advanced, which also allows considering hedging as a means to achieve effective argumentation by the optimization of the epistemic responsibility of a sender of scientific information.

In scientific texts, hedging as a pragmatic strategy is reflected in the variety of discursive markers. First of all, full-valued verbs are actively used as hedges, one example of which is such a non-factive verb as *suggest*, the hedging construction with which is presented in the following example: *As intuition suggests, the discrepancy between the small and large setting is narrower when the small economy has a*

large number of traders (Massari, 2019). In this fragment of the text, the author of the article, instead of directly drawing a conclusion from the propositions advanced by him, introduces it using the hedging construct *as intuition suggests*, whereby he achieves two goals: he relieves himself of responsibility for the indicated judgment, as well as implicitly prompts a reader to the perception and analysis of the proposed argumentation.

In the next example, it is possible to observe the use of an approximative adverb as a hedge: *Propositions 8 and 9 show that the results of Propositions 3 and 4 hold, approximately, for some small economies with a large number of traders* (Massari, 2019). In this example, it can be seen how the author evaluates the reliability of two propositions made earlier as practically true, however, he does not dare to express this as a categorical statement due to the lack of absolute evidence, which also emphasizes his desire to adhere to the criterion of accuracy within the framework of scientific discourse. In the same example, it is necessary to note the quantifier *some*, which can also be considered as a hedge, since with it the author manages to express his position regarding the truth of the analyzed judgments only for a certain number of small economies with a large number of traders, while the absence of this hedge made this statement would be categorical, which is unacceptable in the absence of information confirming such an argument.

Hedging constructions can also be represented as adverbial expressions of indefinite degree, for example: *This result holds in general* (Massari, 2019). In this text fragment, the author evaluates the result, which he comes to in the course of his discussions on the possibility of asymptotic market efficiency in the previous paragraph, as true *in general*, while leaving room for reflection and possible discussion about the circumstances that could criticize the conclusion. In addition, the reasoning itself begins with the sentence *Markets do become asymptotically efficient* (Massari, 2019), in which the auxiliary verb *do* is used to strengthen the advanced proposition. Thus, the author focuses on it and expresses an extreme degree of confidence, as a result of which this auxiliary verb can be regarded as a hedge.

Discursive hedge markers are also reflected in the text through the use of modal verbs, the use of which can be observed in the following example: *This approximation **can be seen as** a generalization of a fundamental result about Bayesian accuracy* (Massari, 2019). The author, having previously analyzed the process of approximating the asymptotic value in the equation, offers a certain vision when considering this phenomenon as a fundamental result of the analysis of the research question, due to which one can observe the case of explication of subjective-modal tonality through the hedging construction which serves as a communicative device in the process evidence by the author of the article of the truth of one's own position and advancement of the conclusion by postulating one of the possible manuals interpretation of the research question.

The following fragment is another example of the use of a hedging strategy in a modal verb construct in the author's proposition: *This interaction can be responsible for failures of the MSH* (Massari, 2019). In this case, it is necessary to note that lexical unit *can* is used to make the assumption about the influence of the interaction between the size of the market and the type of its main participant on the insolvency of the hypothesis of choosing one or another market analyzed in the work. This causal

relationship seems credible and reasonable to the author, but he does not claim its final reliability due to the possibility of transformation of the studied object in the future.

Adjective can also be used as discursive hedge markers, for example: *In Appendix A, I reconcile the apparent contrast between the selection results in small and large economies* (Massari, 2019, p. 439). In the passage cited from a scientific publication, the author expresses the assessment of the differences between the discussed data selection results. Moreover, such an assessment characteristic consists not only in ascertaining the presence of differences of the studied type, but also in positioning them as obvious and undoubtful, which can also be regarded as a call for reaction for a reader and an attempt to draw his attention to this aspect of what was carried out and described in scientific article.

7. Conclusion

Thus, we can conclude that the use of hedging in written scientific communication as a method of optimizing the pervasive impact and pragmatic strategy is typical for texts that belong to the journal article genre, including economic ones, where a number of the intentions of a sender are realized using hedging constructions, the main of which are the categorization of the utterance, the author's assessment of the degree of reliability of his propositions, distance removal of factual information implied with their help in order to relieve themselves of epistemic responsibility for their reliability, building an implicit dialogue with a recipient of scientific content, achieving the reference accuracy of scientific judgments, including the process of introducing new, relevant information on the studied phenomenon. In addition, it was found that discursive hedging markers can be expressed in a scientific text through various parts of speech, both in the form of a lexical unit and within phrases and collocations.

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