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WAYS OF EXPRESSING GENERAL EVALUATION IN GERMAN SCIENTIFIC DISCOURSE

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Abstract

Specialist's ideas, formed within the framework of their professional activity, add up to the scientific worldview, containing both conventional views shared by most academics and personal opinions regarding research objects. Scientific discourse as a form of proficiency objectification not only results from the cognitive activity but also becomes a product with a specific attitude to the object of utterance. The way of thinking reflected in scientific texts reveals the principles of interpreting any information by a specialist. This article is devoted to the ways of expressing general evaluation as one of the most important components of the scientific worldview of an engineer as a representative of a particular professional subculture and a social dialect speaker. The paper analyzes, the language fragment is given, the use of verbal units conveying a positive attitude of the utterance subject to the speech and reveals additional meanings justifying the evaluation type under consideration. The language material analysis showed that the overall evaluation in scientific texts has a typical "hidden" character manifested in the indirect expressing of evaluative meanings based on the objective characteristics of the elements of the described situation, including ease of use, functionality, clarity and experience of perceptual development (when describing the process of cognition).

Keywords: Cognitive-pragmatic interpretation, evaluative nominations, general evaluation, scientific discourse, worldview

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1. Introduction

A person's linguistic ability is a form of realization of their thought related to practical activity, imposing certain restrictions on the sphere of communication. In the process of linguistic practice, speech is formed in accordance with the laws of knowledge verbalization, due to both linguistic and extralinguistic factors. The subject area of the existence of human communication significantly affects both the method of expressing ideas and the choice of language tools for their objectification.

Professional communication is an important aspect of a specialist's activity. As a rule, an objective and unbiased description of scientific facts is carried out within the framework of the scientific discourse. However, one cannot deny the importance of and even the need for value judgments that act as a kind of a prism, predetermining both the awareness of public scientific attitudes, reflecting generally accepted stereotypes shared by most members of the scientific community, and the opinions of their colleagues, and even their thoughts and conclusions regarding the object of professional interest. Indeed, the axiological aspect is an integral part of communication, mediated by the situation of special communication. Frequently, the forms of scientific discourse manifestation along with actual data about the described fragment of reality also contain evaluative information. The method of its expression and language design is of considerable interest both from the point of view of the general principles of thought verbalization and from the standpoint of pragmatic meanings inherent in the utterance.

It seems that the general evaluation, reflecting the opinion of a specialist on the "good-bad" scale, has several specific features in the scientific discourse. Their identification is the goal of this article, which assumes a sequential consideration of the following issues: firstly, what role the evaluative aspect is supposed to play in the process of a specialist's scientific worldview formation; secondly, what pragmatic potential of general evaluation is supposed to be in the scientific discourse; thirdly, what additional meanings allow a specialist to realize a general evaluation and what features of its linguistic expression are.

The theoretical basis of the problem analyzed in the article comprises linguistic and philosophical works devoted to the evaluative aspect of the linguistic worldview formation (Arutyunova, 1999; Boldyrev, 2011; Boldyrev, 2016; Hajdegger, 1993; Wolf, 2009). The empirical basis of the study is a corpus of terminological fragments (Badke-Schaub et al., 2012; Charwat, 1994) that describe characteristics of special technical machines and the principles of working with them taking into account an engineer's professional position.

2. Problem Statement

The worldview is a multidimensional image that is formed in the process of life and is in constant development, including data on the surrounding reality, the results of a person's practical development of reality, communication in a particular environment. The formation of an individual's worldview primarily depends on extralinguistic factors: place of residence, social status, scientific and cultural levels of the society development, which prescribes the norms and rules that are enshrined in it and inherited by the following generations (Gorokhova & Kubyshko, 2018). Personal psychological and hereditary characteristics also influence the formation of one's worldview.

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A language as a means of thinking and objectification of thought reflects human knowledge in the form of signs. In accordance with the regulated practice of using linguistic norms, it models reality, expressing explicitly and implicitly personal and social values. The axiological component of a person's worldview is an integral part of the linguistic worldview, which has various forms of manifestation. As Heidegger wrote, the view of the world inevitably expresses a person's attitude towards it (Hajdegger, 1993); therefore it can be assumed that both language and speech are the results of evaluative processing of information present in any communication situation.

Evaluation, according to Boldyrev, is one of the types of interpretive activity of consciousness (Boldyrev, 2011; Boldyrev, 2016). The connotative data processing is a "schematization of experience in accordance with a collective and individual scale of evaluations, systems of norms, ideals, stereotypes, values accepted within the framework of a particular culture, i.e. estimated categorization of objects and events" (Boldyrev, 2016, p. 13). Evaluation performs an orientation function, thanks to which a person thinks, acts and is aware of themselves and other members of society.

The scientific discourse also has evaluation aspects: in addition to the general provisions formed in the process of developing concepts, it contains the ideas of a group of specialists about good and bad, primary and secondary, acceptable and unacceptable. In accordance with scientific ethics, the connotative aspect of scientific positions and achievements is comprehended by a specialist globally, meaning that their significance and possible consequences for all of humanity are taken into account.

The overall characteristics of the scientific discourse develop under the influence of many factors that determine the specificity of communication. Time and place, degree of formality, subject area, communicator intentions and other circumstances affect both the internal (pre-linguistic) and external (linguistic) form of thought (Tsoupikova et al., 2019). Based on the purpose of communication, the author of the utterance gets the recipient focused on certain aspects of the situation, deliberately emphasizing or keeping silent about certain details. The language structure in this regard is the result of cognitive and pragmatic processing of content, which includes both the information aspect associated with the transfer of evidence and the intentional component responsible for the implementation of the communicative goal. The specificity of language construction of reality is subject to general language laws, on the one hand, and is creative in nature, amenable to certain restrictions, on the other.

3. Research Questions

The expression of evaluative meanings is one of the means of influencing the addressee and a way to achieve the goal through a communication act. The pragmatic potential of connotation is determined by the meaning the statement takes in a particular situation, which involves not just addressee's understanding of what has been said, but interpreting the information received bearing in mind the entire communication context: the subject area, motivating premises, background knowledge and communication intentions (Shnyakina & Klyoster, 2019).

An engineer's language used as a material for the research is a means of communication within a professional group whose activities are aimed at the development and implementation of technical inventions in people's lives (Sishchuk et al., 2018). The sublanguage of a specialist reflects the specific nature of the way they perceive their results, what is manifested in the evaluation attitude to the latter. In

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the scientific discourse, some factors make it possible, explicitly or implicitly, to qualify an invention as good or bad, thus giving it a general evaluation. This evaluation is based on the established facts of the positive experience of using the invention that meets the needs of the society at a given time.

The phenomenon of a general (holistic) evaluation is described by Arutyunova (1999), who considers it "a balance of positive and negative factors" (p. 195): an object or phenomenon can be evaluated positively if the number of positive characteristics exceeds the number of negative ones. It is true that an object having a set of features in certain situations turns its sides to the researcher and hence can be evaluated differently; therefore, for an adequate understanding of the grounds for connotations, a context is needed to see the motivating basis of the evaluative attitude of the specialist to the object of evaluation.

The motivation of connotations recorded in the scientific discourse is based on objective characteristics of things. An engineer's interest in a positive attitude to the scientific research result predetermines the pragmatic context, which is based on the objectification of object data, positively evaluated in the society. In this regard, the linguistic fragment is considered as having some evidentiary standards, implying verbalization of the acceptable meanings that exist in any field of activity and are specific to it.

4. Purpose of the Study

The aspect of the scientific discourse study presented in the article is relevant since it deals with the actively investigated problem of constructing a worldview by means of a language, as well as with the pragmatic potential of evaluative nominations in the scientific discourse.

5. Research Methods

The paper uses the method of cognitive-pragmatic interpretation, which involves explaining verbal constructions through the communicators' intentions.

6. Findings

The linguistic expression of the general evaluation in the field of scientific communication has certain features that have been identified based on the analysis of the text fragments (Klyoster & Galich, 2015).

The first specific feature is related to a wide variety of verbal means that have the potential to express a general evaluation in certain contexts. This diversity is associated with the possibility of its explicit or implicit language forms.

An explicit evaluation has a clear character, which implies direct objectification of a positive evaluative sense through a neutral indicator *gut* and its expressive correlatives (genial, ausgezeichnet, ideal):

- *Ein **guter** Kaffee braucht auch eine **gute** Maschine*.

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- *Der Däne suchte nach einer **besseren** Lösung und fand sie in der Magnettonaufzeichnung mit Stahldraht als Tonträger. Die Erfindung war **genial**, konnte sich aber in der Praxis nicht durchsetzen.*
- *Professor Jörg-Henry Schwabe lehrt die Gebiete Getriebetechnik und Maschinendynamik im Fachbereich Maschinenbau der EAH Jena. Seine **ausgezeichnete** Erfindung «Dynamisch getriebener Mischarm» **verbessert** das Mischverhalten von Planetenmischern, die beispielsweise zum Mischen von Betongemengen verwendet werden.*
- *Nur die Tendenzen sind während eines langen Zeitraums fortschrittlich und wirksam, welche die reale Maschine der **idealen** annähern.*

Given that the evidentiary standards of a scientific text are highly required in the society, a sentence with an explicit evaluation can also have a verbalized additional parameter, which is a particular characteristic of the object being described: *Die Lösung war so **einfach** wie **genial**, auf dem einen Hebel ein kleines Gummirad zu befestigen.*

Implicit evaluation, in its turn, is an indirect, implicit type of expression of one's opinion or attitude. The main component of this evaluation type structure is one of the particular characteristics of the object, and a priori evaluated positively. An example of such a construction can be seen in the following statement: *Dennoch können die meisten Menschen ihren Fernseher **problemlos** bedienen.*

Despite the absence of adjectives in the sentence with a common evaluative sense, the word "problemlos" creates a positive background that forms a generally positive impression of the addressee. The type of evaluation under consideration is quite common in the scientific discourse since it is concise, on the one hand, and evidence-based, on the other.

The second specific feature of the implementation of the general evaluation in the scientific discourse is associated with implicitness. We are referring to the objectification of some specific motivating signs, considered in the article as unique acceptable meanings that are significant for a particular subject area from the point of view of specialists and the society. The overall evaluation outcome, in this case, is based on the particular parameters recorded in each individual sentence, which, however, can be supported by an explicit expression of the evaluation.

The most significant parameter from the viewpoint of the society is the ease of use. The availability of technical development for a large mass of people is the key to success: the simpler and more efficient the management, the greater the demand for technical achievement. The means of expressing the idea of ease of use are adjectives **problemlos, bequem, optimal, komfortabel, schnell, leicht,** combination **ohne Mühe:**

- *Eine auf die **problemlose** Bedienung ausgerichtete Benutzeroberfläche eines Programms vereinfacht die Arbeit am Computer erheblich.*
- *Das **bequeme** Gerät sollte speziell die Funktionen besitzen, die im Alltag z.B. eines Managers wichtig sind.*
- *Mit dem Komatsu-Hydrauliksystem sind höchste Produktivität und **optimale** Bedienbarkeit garantiert.*

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- *Die Soft-Safety ist eine **komfortable** Konfigurationsumgebung, mit deren Hilfe die Sicherheitsapplikationen und zusätzlich die allgemeinen Steuerungsaufgaben in der klassischen Schaltplansprache erstellt werden.*
- *Das Sicherheitshandbuch bietet einen **leichten** Einstieg in die umfangreiche Materie der Sicherheitstechnologie.*
- *Die technischen Geräte sollten möglichst so konzipiert sein, dass auch Laien sie **schnell** und **ohne Mühe** nutzen können.*

Besides, the idea of ease of use is realized with an additional indication of a wide range of people with access to equipment: *Wenn die Kleinigkeiten in der Konstruktion, im Design beachtet werden, dann wird die Bedienung von technischen Geräten tatsächlich für (fast) alle leicht*. In addition, in the examples above, it is possible to point out the nouns with the meaning of people having no special technical knowledge and skills, nevertheless being able to use this or that technical development or study technical literature with little effort.

The next acceptable meaning within the scientific community, evaluated positively, is the functionality of the device, consistent with the spirit of the times and progressive technical standards. The idea of functionality in various contexts is realized through various descriptive constructions, including information on a variety of functions, light weight, ergonomics, productivity, improvement:

- *Das **positive** Erleben im Umgang mit technischen Systemen spielt besonders dann eine Rolle, wenn Menschen **die große Wahl** haben.*
- *Es ist verständlich, dass der Hubschrauber umso **idealer** sein wird, je geringer sein Eigengewicht ist, (unter der Bedingung, dass andere Eigenschaften sich nicht verschlechtern).*
- *Mit dem Komatsu-Hydrauliksystem sind **höchste Produktivität** und **optimale Bedienbarkeit** garantiert.*
- *Betrachten wir doch die Frage der **Schönheit** einer Maschine. Es ist unbestritten, dass eine gute Maschine auch schön sein muss. Die gerade erst entwickelte hat das Recht, hässlich zu sein. Wichtig ist, dass ihr Wirkprinzip vollkommener ist als das Prinzip der bereits vorhandenen Maschinen.*

An important parameter, which is included in a range of acceptable meanings, is the safety of the object of evaluation, associated either with the absence of potential threats or with the ability to impede their implementation. Based on this, the statement may contain information about the absence of danger and risk, the achievement of security by minimizing it until it is completely eliminated, as well as creating a safe environment for users:

- *Die Gesamtsicherheit einer Maschine bezeichnet den Zustand, der frei von unvertretbaren Risiken für den Menschen ist oder als **gefahrenfrei** angesehen wird.*
- *Es ist erforderlich, mögliche Gefahren bereits in der Konstruktionsphase der Maschine zu ermitteln und durch **gut geeignete** Maßnahmen zu verringern.*
- *Ziel ist es eine **gute Arbeitsatmosphäre** zu schaffen und die Bedingungen so zu gestalten, dass möglichst **geringe gesundheitliche Belastung** entsteht.*

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- *Ob an einer einfachen oder komplexen Maschine, der erforderliche Personen- und Prozessschutz wird durch die vom TÜV Rheinland approbierten* ***Sicherheitsprodukte*** *gewährleistet.*
- *Mit der Installation von optimalen Anzeigen zur Darstellung von Betriebsregimen und Betriebsparametern erhöht sich die* ***Arbeits-, Betriebs-, Fahr- und Flugsicherheit*** *wesentlich!*

Another parameter with positive connotations in the scientific discourse is endurance. Acceptable meanings considered below deal with the principles of work and a specialist's creative activity rather than technical machines.

A necessary feature that ensures the success of the cognitive process is the clarity of thoughts and language in proposing hypotheses and formulating scientific guidelines regarding the principles of a particular device operation:

- ***Gute*** *Hypothesen sind Vor-Thesen, die vorläufige Antworten auf die gestellten Fragen geben. Diese müssen gleichfalls* ***klar*** *formuliert werden.*
- *«Ich habe eine ganz* ***klare*** *Meinung zu technischen Anwendungen. Ich wollte mit dieser Forschung nicht nur meine Neugier befriedigen», sagte der Forscher aus Oregon.*
- *Die Ergebnisse zeigen einfach* ***super****, dass die bremskraftabhängige Gestaltung der Leuchten zu einer* ***Verbesserung der Voraussagbarkeit der Verhaltens*** *des anderen Fahrzeugs führt und damit eine* ***bessere Abstimmung*** *zwischen den beteiligten Mensch-Technik-Systemen ermöglicht.*

The next acceptable meaning is perceptual information available in the process of cognition or use, which is a visual tool that provides a better understanding and therefore is evaluated positively:

- *Die Piloten erhielten damit ein taktiles Feedback und konnten die Hebel* ***ausgezeichnet*** *unterscheiden, ohne hinsehen zu müssen.*
- *Die Kommunikationsansicht ermöglicht über die Zustandsanzeige eine* ***perfekte*** *Diagnose des angeschlossenen Gerätes*.

It should be clarified that a person's tactile and visual contact with technical development provides them with more complete data that allow creating an adequate view of the principles and possibilities of its use.

7. Conclusion

The cognitive-pragmatic analysis of terminological fragments that implement the sublanguage of an engineer made it possible to draw several conclusions.

Firstly, the scientific view of a specialist's world is a combination of subject and evaluative knowledge. Due to an engineer's activity being focused on society needs, a language reflects not only their specific knowledge but also evaluative opinions regarding the result of the professional activity.

Secondly, a scientific text has a pragmatic specificity, which is the result of a critical understanding by scientists of not only their achievements but also those of their colleagues. In the process of producing texts, a specialist interprets information, expressing the general attitude to the described object or phenomenon, considering the norms and stereotypes established in the society. A specific feature of the expression of this relationship is a general evaluation, based on one or more

features of the evaluated object. Thus, the author of the message creates a peculiar pragmatic context in which the ideas about positive characteristics of a particular scientific development or technical facilities being in demand with the society are realized. By emphasizing objective characteristics of the object, the author of a linguistic message creates a motivating evaluation basis that predetermines the evidence of the scientific text.

Thirdly, the objectification of the overall evaluation in the utterance has several features. On the one hand, it can be both explicit and implicit. The scientific text reasonableness ascribed socially determines, in most cases, additional parameters implemented in the utterance with the view of acceptable meanings adopted in a team. For technical facilities, it is simplicity in management, functionality, safety; for the engineer's thought process – clarity and multidimensionality, realized when several channels of perception are used.

The considered set of characteristics, reflecting the most important aspects of the overall evaluation, is not complete. Identification of additional evaluative meanings in the sublanguage of an engineer, as well as the possible focus on the negative perception of the scientific research findings, create prospects for further studies of the general evaluation forms in the scientific discourse.

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