Russian Journal of Cultural Studies and Communication. 2024. 3(2). P. 78–90 Research Article
DOI 10.24833/RJCSC-2024-3-2-78-90

PRAGMATIC BASIS FOR UTILITARIAN EVALUATION IN GERMAN ENGINEERING DISCOURSE[1]

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Abstract. This paper investigates how engineering discourse evaluates technical developments based on their utility, uselessness, or harm. It examines German-language specialized texts that report on contemporary scientific innovations, using a functional-pragmatic analysis method to explore the propositional structure of statements that convey utilitarian information. The article, published in a scientific journal, is considered in this study as a situationally conditioned speech act that aims to inform readers through the communicative strategy of explanation. The analysis focuses on identifying the implicit configurations that the author creates in the linguistic expression of propositions such as "fact," "opinion," and "assessment." The combination of these propositions in one context makes it possible to describe the methods of presenting scientific data from a utilitarian point of view. Utilitarian evaluation mainly depends on the author's explanation of cause-and-effect relationships, which form the basis for assessments. Moreover, the author often refers to authoritative opinions or experimental results to support the evaluation. The text also includes unargued assessments, which invite the reader to agree or disagree. The analysis in this paper shows that utilitarian assessments in engineering discourse are driven by the goal of professional communication. They follow the principles of rationality, provability, and objectivity, which are reflected in the author's deliberate detachment from the subject of description. These pragmatic features are related to the values of professional communication, which involve not only providing reliable data, but also promoting progressive ideas in society. The rhetorical effect of persuasion achieved by reasoned objectification of utilitarian assessments in the text is a distinctive characteristic of scientific discourse. It is also an efficient way of fulfilling the objectives of specialized communication. This study contributes to a better understanding of the pragmatic aspects of utilitarian evaluation in engineering discourse, highlighting its empirical basis and its importance for the wider field of professional communication.

Keywords: engineering discourse, professional communication, pragmatics, linguistic manipulation, utilitarian evaluation, proposition, argumentation

[1] English translation from the Russian text: Shnyakina N.J., Klyoster A. M. 2023. Pragmaticheskie osnovaniya utilitarnoj ocenki v nemeckom inzhenernom diskurse [Pragmatic Basis for Utilitarian Evaluation in German Engineering Discourse]. *Diskurs professional'noj kommunikacii [Professional Discourse & Communication].* 5(4). P. 11–26. (In Russian). DOI: https://doi.org/10.24833/2687-0126-2023-5-4-11-26

Scientific and technological progress, as a fundamental factor in the development of humanity and the source of unlimited opportunities for people to improve their quality of life, is a driver of the successful development of society in the political, economic and social spheres. In this regard, the work of engineers to develop new or optimize existing engineering ideas acquires particular significance. Engineers are expected to not only design new inventions, but also to monitor their successful operation. Specialized communication refers both to the professional interaction between scientists and to the further popularization of scientific achievements in the global community through the media. Publishing the results of scientific and technological progress in paper and electronic journals is a necessary link in the process of bringing scientific ideas to life and presumes that the authors of scientific articles are focused on presenting economically and socially significant justifications for the use of existing engineering resources for the benefit of society. At the same time, the act of creating a text, despite the objectivity of presentation inherent in the scientific style, is guided by the subjectivity of the author's interpretation of the scientific idea, which is manifested in the choice of means and methods of argumentation and determined by the purpose of the communicative act itself.

The priority of creating favourable conditions for the life of society, as a decisive factor that acts as a guideline in human scientific research, finds direct expression in language in the form of a utilitarian assessment that expresses knowledge about the real or hypothetical positive or negative impact of the results of scientific and technological progress on people's lives.

The importance of a utilitarian assessment for the successful implementation of scientific developments in real life is what has determined the interest in the issues that we will talk about in this article.

The goal of the present article, in which we have adopted the cognitive-discursive approach, is to describe the pragmatic prerequisites of utilitarian evaluation in German engineering discourse. In it, we study the linguistic methods of argumentation within the framework of the communicative explanation strategy. To achieve this goal, we will have to: 1) consider engineering discourse in terms of the interaction of its participants as a speech act associated with providing information to the addressee; 2) describe the structure and specificity of utilitarian evaluation and consider explanation as the main strategy of linguistic manipulation in utilitarianism; and 3) identify through the use of functional-pragmatic analysis the linguistic specificity of utilitarian argumentation as a linguistic fragment of engineering discourse.

This work is based on the hypothesis that the content of a statement that objectifies utilitarian evaluation in German engineering discourse has certain pragmatic grounds that predetermine the method of linguistic manipulation on the specialist.

The relevance of this study lies in the fact that it explores an issue that is of particular significance right now, namely, how the pragmatic prerequisites of the linguistic modelling of reality are reflected in professional speech.

In terms of this paper's theoretical significance, we can point to the fact that it clarifies the foundations of utilitarianism in professional communication. The practical value of this work is that its results can be used in terminological and cognitive-discursive studies. The results of the description and unification of various linguistic means of expressing utilitarian evaluation can be used both by experts specializing in stylistics and translation studies, and by authors of scientific and technical texts when developing engineering research projects.

Research materials and methods

The material used for the research was a corpus of examples – 300 units formed based on scientific and technical papers published on the specialized German-language portal *Der Maschinenbau*[2].

For the purposes of this article, the unit of analysis is a terminological fragment that contains an indication of the utilitarian attitude of the author of a given message to inventions, the sphere of their services, processes, and scientific ideas and theories[3].

The pragmatic focus of the present research guides our consideration of language fragments from the standpoint of the theory of speech acts (Searle 1986). The research method used is the functional-pragmatic analysis of the texts, which has been used in various forms in linguistic works (Galimova 2021; Kuznetsov et al. 2019; Lyubavina 2009; Mustajoki 2006). Given the purpose and specificity of the empirical basis of this study, it seems appropriate to use a version of functional-pragmatic text analysis that involves transforming the surface language structure into simple propositions, the synthesis of which allows us to combine individual elements of meaning into a single whole behind the statement (Kuznetsov et al. 2019: 171). Understanding a proposition as a "minimal informational unit of textual content," the authors note that they are made up of a predicate and an actant: the number of propositions depends on the number of predicates, and the number of actants is determined by the number of semantic valencies of the predicate (Kuznetsov et al. 2019: 170). A proposition or set of propositions forms the deep basis of a statement (Mustajoki 2006: 360).

The first stage of functional-pragmatic analysis involves identifying the syntactic connection between the elements of a sentence, which is done using the formal-grammatical method. The second stage is describing the conceptual certainty of linguistic means, identified by the meanings of their semantic features, which determines the use of semasiological analysis. The third stage involves directly identifying propositions as

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[2] *Der Maschinenbau [Mechanical Engineering]*. URL: https://der-maschinenbau.de/ (accessed: 13.05.2023). (In German)

[3] Klyoster A. M. 2019. Metod terminologicheskoj fragmentacii v sfere izuchenija professional'nogo diskursa [Terminological fragmentation in the field of professional discourse]. In *Jazyk i kul'tura v jepohu integracii nauchnogo znanija i professionnalizacii obrazovanija: Materialy III mezhdunarodnoj nauchno-prakticheskoj konferencii [Language and culture in the era of the integration of scientific knowledge and the professionalization of education. Proceedings of the 3rd International Scientific Conference].* Pjatigorsk. P. 178–183. (In Russian)

elements of the general meaning of a statement (Kuznetsov et al. 2019: 171). With the specifics of the present research in mind, this article uses a classification of propositions from the point of view of the grammatical, conceptual and functional-semantic characteristics of the predicate into "factual propositions," "opinion propositions," "evaluative propositions," and "propositions as expressions of will" (Kuznetsov et al. 2019: 171). The cognitive-pragmatic approach developed by V. Dem'jankov (Dem'jankov 1999) occupies an important place in the complex of research methods, aiming to explain the functional-pragmatic properties of the linguistic constructions analysed in this article.

The solution to the theoretical problems posed in the present article involves a literature review that aims to define the concepts used and formulate provisions that are significant for the empirical part of the research.

Review of theoretical sources

Engineering discourse is defined as "an information field based on a scientific picture of the world and including the denotative content of engineering activity, reflected in the consciousness of a professional and conditioned by the realities of professional activity" (Avdeeva 2005: 317). This content is realized within the framework of professional language communication, which can be considered as a sequence of communicative acts carried out by participants in oral and written form. The coding and decoding of scientific texts, along with other methods of verbal interaction, make up a specific type of contact between scientists and society. First, engineering texts that are intended for all interested readers provide information about the latest technological developments. In addition, the transmission of new ideas can act as a stimulus encouraging the recipient to take specific actions.

The communicative-pragmatic prerequisites of professional communication through the transmission of information in the form of scientific texts predetermine the specificity of speech acts that occur in certain conditions, presupposing the presence of an author (sender) of a linguistic message, and addressee (recipient), the subject of the message, the message itself, presented in a certain linguistic form, the practical goals and intentions of the communicants, their statuses and roles, their attitude to the conventions of communicative cooperation adopted in society, and a place and time of communication (Azylbekova 2017: 87).

The initial component of the communicative act is the addresser/author/sender of the linguistic message. The method of information sharing and linguistic manipulation within the framework of a given scientific topic is predetermined by its goals and allows us to view professional communication as an illocutionary act characterized by intentionality and conventionality. As a rule, the priority goal of creating a scientific text is to regulate the intellectual activity of the reader in a targeted manner – to

expand their knowledge and potentially influence their decision-making (Azylbekova 2017: 90). In Searle's classification of illocutionary acts, this kind of speech act is described as representative – a statement that proceeds from the real state of affairs in the world as described by the speaker from his or her personal beliefs and motives (Searle 1986: 181). In other words, representatives are a message created by the author intended to inform the addressee and which is understood as a special type of linguistic manipulation (Fjodorova 1994: 48).

The choice to deliver information to the reader in the form of a popular science text with a focus on engineering is determined by the author's need to describe the advantages of the latest technical achievements, which is manifested in the high frequency of utilitarian evaluations – describing the subject matter in terms of its usefulness. As E. Savel'eva writes, the structure of utilitarian evaluation is made up of an object (elements of reality that influence a person and society), a subject (a person who determines the degree of usefulness of an object), and an assessment, based on the opinion of the speaker, of the practical usefulness of the object described in the text for the life of society (Savel'eva 2012: 31). As a rule, due to its rational nature, utilitarian evaluation is for the most part objective and oriented towards the outcome or standard (Azylbekova 2017: 89). This focus on the outcome, brought about through the use of the object of evaluation, is based on the practical experience of bringing inventions into the real world. Standards, in turn, are established norms accepted in society.

Utilitarian evaluation is a significant element of the axiological system of any culture and has specific patterns of objectification in language. Based on the norm "useful" and the anti-norm "harmful" (Shnyakina, Kloyster: 2022), it has several propositions: an "opinion proposition," which contains information about the modality of the statement; a "factual proposition," which presents knowledge about the grounds for evaluation based on previous experience; and an "assessment proposition," which expresses the author's attitude towards the phenomenon being described on the "useful–harmful" scale. Predetermined by the purpose of the speech act, utilitarian evaluations, being woven into the structure of the linguistic message, act as a means of information and a kind of "passive influence" on the reader that is conditioned by society's need to minimize negative impact and risks, on the one hand, and maximize the positive impact of technological inventions, on the other.

As we noted earlier, informational texts are representative speech acts. As such, they are messages that are related to a certain state of affairs and thus take the form of a linguistic fact. Such speech acts are characterized by the "dry" presentation of data by the addresser, as well as by more or less explicitly expressed opinions and impressions, which correlate with the goal of the speech message. The need for objectification in expressing the grounds for evaluation – arguments of sorts for describing an object as useful or harmful – contributes to the speaker's use of certain communicative strategies that are understood by Issers as a "complex of speech actions aimed at achieving communicative goals" (Issers 2008: 54). The main strategy of influence in

utilitarian evaluation is to provide a reasoned explanation that effectively influences the interlocutor. Here, explanation is understood as "an argument whose assumptions contain information that is sufficient to derive a description of the phenomenon being explained from it"[4].

Bringing knowledge about the scientific and technological progress to the mainstream presupposes that the reader is uniquely involved in the world of the latest discoveries and ideas. The argument here concerns the basis for evaluation using the "useful–harmful" scale and is carried out by using statistical data or an explication of an authoritative opinion, as well as by constructing a cause-and-effect complex according to the laws of formal logic. The explanation in this case is not only aimed at communicating factual data. It also implies a perlocutionary effect (agreeing with the opinion of the addresser), the formation of stable opinions and assessments in the addressee regarding the characteristics of the subject of the message, and a change in the structures of knowledge, their modification, changes of opinion, expanding one's horizons, and a model of the world – in other words, it involves a kind of cognitive enrichment, a change in the value system, etc. From the point of view of perlocution, the result of delivering information in the form of an engineering text can be considered "the restructuring of the categorical structure of individual consciousness, and the introduction of new categories into it" (Pochepcov 1978: 85–86).

Speech acts used in engineering discourse have forms of explanation and presuppose the presence of several propositions, the variability of the representation of which in a language fragment is studied in the empirical part of this article.

Research results and discussions

The research procedure used in the present article is a functional-pragmatic analysis of language fragments taken from engineering texts. The empirical base consisted of statements containing the most representative adjectives *nützlich, nutzbringend, nutzbar, and schädlich.* The methodology used here allowed us to identify the variability of the propositional design of linguistic constructions conditioned by the methods of argumentation used by the author in the explanatory strategy. We should include the reservation here that only propositions directly related to utilitarian evaluation were involved in our analysis; propositions that appear in a given language fragment but do not participate in the expression of the evaluative meaning on the "useful–harmful" scale were not taken into account.

Our analysis identified several methods of reasoned explanation in utilitarianism.

The first type of utilitarian language fragment is a single-component structure that we call "evaluative propositions" (all translations from the German were performed by the authors of this paper):

[4] *Filosofija: Enciklopedicheskij slovar' [Philosophy: Encyclopedic Dictionary]*. 2004. Moscow: Gardariki. URL: http://philosophy.niv.ru/doc/dictionary/encyclopedic/articles/899/obyasnenie.htm (accessed: 03.05.2023). (In Russian)

- *Dieses **Entwicklungspaket enthält** verschiedene **nützliche Funktionen** und einige Programmbeispiele / This package of solutions contains various useful functions and example programmes.*
- *Der Kreissäge- und Frästisch zeigt, wie bequem und **nutzbringend** eine für Holzbearbeitung geeignete **Bohrmaschine** als Tischkreissäge und Tischfräse **benutzt werden kann** / The circular saw and milling table demonstrate the convenience and usefulness of using a woodworking drill as a table saw and router.*
- *Des Weiteren **sind IO-Link Safety Devices**, die der Spezifikation entsprechend entwickelt wurden, unabhängig vom Hersteller des IO-Link Safety Masters **nutzbar**. Der Anwender kann sich folglich das am besten für seine Applikation geeignete Gerät am Markt aussuchen / What is more, IO-Link Safety devices developed according to the specification can be used regardless of the manufacturer of the IO-Link Safety master. This way, the user can choose the device that is best suited for the intended application.*
- *Solche Abweichungen können durch äußere Einwirkungen (elektromagnetische Störungen), durch **schädliche Effekte** in der Verkabelung (Reflexionen, Dämpfung) und durch defekte Bustreiber in den Teilnehmern **entstehen** / Such deviations can be caused by external influences (electromagnetic interference), harmful effects in the cabling (reflections, attenuation), and faulty bus drivers.*

The identification on "evaluative propositions" is based on an analysis of the syntactic connection between the predicate and the actants, represented in the examples we have looked at by superficial grammatical constructions: *Entwicklungspaket enthält nützliche Funktionen, Bohrmaschine kann nutzbringend benutzt werden, IO-Link Safety Devices sind nutzbar, Abweichungen können durch schädliche Effekte entstehen.* A semasiological analysis shows that the identified predicates have the conceptual characteristic of "being" (*enthalten, benutzen, sein, entstehen*); noun-actants are nominations of technical apparatus or abstract elements of engineering activity and are characterized by the conceptual feature of "inanimateness"; evaluative words are direct linguistic objectifications of the meanings "useful" / "harmful" and serve to describe devices in terms of their elements and functions.

This method of expressing a utilitarian evaluation does not presuppose argumentation. The statement is interpreted by the addressee based on the alignment of the conceptual features of the evaluative judgement with the features of the object of evaluation known to them. The lack of argumentation encourages the addressee to accept the information presented by the addresser on faith or disagree with his or her point of view. The author is thus detached from the subject of speech, and this detachment is complemented in such contexts by the use of the modal verb *können*, which indicates that the state of affairs described in the linguistic fragment may exist in reality. Engineering discourse is replete with examples of the single-component type of propositional structure in utilitarian evaluation. This is typically due to the authoritative nature of the publication, the purpose of which is to objectively inform the reader about the results of scientific and technological progress.

The second type of propositional variation found in language fragments that deal with the subject of engineering is a dual-component structure that includes "evaluative propositions" and "opinion propositions." Opinions, like evaluations, are the result of the author's interpretation of the information presented in a scientific text, a "factoid" (Kuznetsov et al. 2019: 175), containing both subjective and objective elements of knowledge.

On the one hand, opinions can be verbalized in a scientific text through an explicitly recorded proposition expressed in a separate statement:

- ***Auch werden interessante Statistiken erläutert****. So sind bei 71% aller Spear-Phishing-Angriffe schädliche URLs beteiligt / Explanations are given for interesting statistical data. For example, 71% of all phishing attacks involve malicious URLs.*
- ***Pioniere auf diesem Gebiet haben aber in den letzten zwei Dekaden längst bewiesen****, dass CPQ (Configure, Price, Quote) – Lösungen den kompletten Angebots- und Projektierungsprozess auch bei Anlagen und ganzen Werken durchgängig und* ***nutzbringend*** *unterstützen können / However, pioneers in this field have proven over the past two decades that CPQ (Configure, Price, Quote) solutions offer consistent and cost-effecitve support for the entire project quotation and planning process, even for systems and entire factories.*
- *Durch eine weitere Auswertung der Bilddaten lässt sich der Verschleiß außerdem genau quantifizieren und interpretieren.* ***So können wir unterscheiden****, ob es sich bei einer Verfärbung einfach nur um Schmutz oder aber um schädlichen Lochfraß handelt / Further evaluation of the image data makes it possibly to accurately determine and interpret wear and tear. This allows us to determine whether discoloration is simply due to dirt or to harmful pits.*

On the other hand, opinions can be expressed in a condensed form directly within the framework of a statement containing a utilitarian evaluation: *Obwohl Cyber-Angriffe in Deutschland* ***laut Bitkom*** *nicht nur häufiger, sondern auch wirtschaftlich* ***schädlicher*** *sind als noch vor zwei Jahren, hat nur die Hälfte der befragten Unternehmen und Organisationen vorgesorgt / According to Bitkom, not only are cyberattacks are more frequent in Germany than they were two years ago, they are also more economically damaging, but, despite this, only half of the companies surveyed have taken precautions. Modal words, in turn, are an implicit means of expressing the opinion of the author of a scientific text: So hat ein 80 Liter Dieseltank eine Energie von 784kWh, eine 500kg schwerere Lithium-Ionen-Batterie hingegen lediglich 75kWh – von denen* ***leider*** *nur 55kWh* ***nutzbar*** *sind / Thus, an 80-litre diesel tank has an energy content of 784kWh, whereas a 500-kg lithium-ion battery has just 75kWh, of which, unfortunately, only 55kWh are usable.*

In the examples given, the "opinion proposition" acts as a necessary component of an explanatory strategy aimed at the objective presentation of scientific information. The grammatical structure of such a proposition is based on the syntactic relations between the predicate and the actant: *Statistiken werden erläutert, Pioniere haben*

bewiesen, wir können unterscheiden. As a rule, from a conceptual point of view, the semantic function of the predicate is an indication of the result of a thought process, which is manifested in the presence of verbs of mental and speech actions (*erläutern, beweisen, unterscheiden,* etc.). In turn, knowledge about actants is expressed through nouns that nominate a source of authoritative opinion (*Statistiken, Pioniere*), or an indication of the author of the text, who is attempting to involve the addressee in scientific thought. In condensed propositions, the main linguistic function is performed by the actant, nominated, for example, by a proper name indicating an organization that is considered an opinion leader in society. It is rare for the authors of scientific texts to offer their own opinions, preferring instead to use indirect indications through the use of modal words. It should be noted that the pragmatic specificity of such dual-component utilitarian evaluative structures is aimed at objective explanation, distancing the author from the facts being described, and necessarily limiting any subjective manifestations in the scientific text.

The third type of propositional design of a utilitarian statement is a combination of "evaluative proposition" and "factual proposition" and is associated with the basis or consequence of the evaluation. The use of a "factual proposition" is a significant method of argumentation used in scientific texts and represents information interwoven into an evaluative statement in accordance with cause–effect relationships: the evaluation and the grounds for making that evaluation on the one hand, and the evaluation and the consequences of that evaluation on the other.

In the first case, the "factual proposition" acts as a kind of justification for a utilitarian evaluation – something is useful/harmful on a given basis:

- ***Gibt es eine unerwartete Veränderung der Spannung**, können schädliche elektrische Interferenzen durch die Antenne oder den Spannungseingang in das Mobilfunkgerät eindringen / If there is an unexpected change in voltage, harmful electrical interference may enter the mobile device through the antenna of the power input.*
- *Die Zentriereinheit kann Temperaturdifferenzen von bis zu 30K kompensieren. Der im Kegel eingesetzte Gummi versprödet nicht und ist unempfindlich gegen Verunreinigungen oder Späne. **Sollten einmal Späne eingedrückt werden**, sind diese für das System unschädlich / The centring unit can compensate for temperature differences of up to 30K. The rubber used in the cone does not become brittle and is insensitive to dirt and chips. If the chips are pressed in, they cannot do any harm to the system.*

The "factual proposition" (*Gibt es eine unerwartete Veränderung der Spannung*), verbalized in the first example, is the condition and basis for the occurrence of a negative effect in the electrical system of the device. In the other example, the "factual proposition" (*Sollten einmal Späne eingedrückt werden*) is the basis for the absence of harm to the system being described.

In the second case, the "factual proposition" reflects information about the consequences of a negative influence and acts as its result – that is, if something is harmful, then it will bring about a certain result or action:

- *Falls die Umgebungstemperatur schädliche Werte erreicht,* ***muss die USV über ein Klimagerät gekühlt oder geheizt werden können*** */ If the ambient temperature reaches unacceptable levels, use an air conditioner to cool or heat the UPS (uninterruptible power supply).*
- *Sumitomo steht gemeinsam mit Lafert und Invertek in der Unternehmensgruppe allen Kundenanforderungen aufgeschlossen gegenüber.* ***So brauchen Präzisions- und Servoantriebe in Robotern und Cobots ausgedehnte Sicherheitsfunktionen****, auch weil Kollisionen und harte Stopps grundsätzlich schädlich für ein Getriebe sind / As a part of the group of companies including Lafert and Invertek, Sumitomo is open to all customer requirements. For example, precision and servo drives in robots and cobots require extensive safety features, in part because collision and sudden stops can seriously damage the gearbox.*

These language fragments contain the following "factual propositions": *muss die USV über ein Klimagerät gekühlt oder geheizt werden können; So brauchen Präzisions- und Servoantriebe in Robotern und Cobots ausgedehnte Sicherheitsfunktionen.* In terms of grammatical structure, "factual propositions" are made up of predicates and actants. The predicates here are the verbs that denote technological processes (*kühlen, heizen*). The conceptual feature of actants is their "inanimateness." As a rule, in these kinds of contexts, we are talking about devices that perform a specific function (*USV – Unterbrechungsfreie Stromversorgung, Präzisions- und Servoantriebe*). The names of these devices (nouns) are in the active position of the subject, which allows the author of the message to focus the addressee's attention of the significant elements of the sentence.

It should be noted that there is a significant pragmatic pattern to the combination of "evaluative propositions" and "factual propositions" in utilitarian evaluation, which consists in the explication of the need to overcome the existing or potential negative impact of new technologies:

- Die benötigten Symmetriewiderstände sind bereits integriert. Diese Kontaktierung ermöglicht es, die Kondensatorenbank direkt mit dem IGBT (Insulated Gate Bipolar Transistor) zu verbinden und dabei *schädliche Induktivitäten zu minimieren* / The necessary symmetry resistors are already built in. This contact allows the capacitor bank to be connected directly to the IGBT (Insulated Gate Bipolar Transistor), thus minimizing harmful inductances.
- Darüber hinaus sollte die USV alternative Energiespeicher mit erweiterten Temperaturbereichen und hoher Leistungsdichte nutzen können. *Auch mit schädlichen elektrischen Parametern* wie eingekoppelte Störspannungen, Lastspitzen sowie rückgespeiste Energie *muss eine USV klarkommen können* / In addition, the UPS must be able to use alternative energy storage devices with

an extended temperature range and high-power density. The UPS must also be able to cope with hazardous electrical parameters such as coupled interference voltages, peak loads and regenerated energy.

An analysis of the examples shows that "evaluative propositions," verbalized in attributive constructions (*schädliche Induktivitäten, mit schädlichen elektrischen Parametern*), are part of "factual propositions" that indicate the minimization of risk or the complete elimination of a given negative action (*schädliche Induktivitäten zu minimieren, auch mit schädlichen elektrischen Parametern … muss eine USV klarkommen können*). In the cases we have looked at, the "factual proposition" is not the basis for evaluation; rather, it acts as a possible guideline or state of affairs that has been verified by experience.

Thus, the functional-pragmatic analysis carried out in the research section of this article demonstrated the significance of individual methods of argumentation that are typical for the design of scientific texts. The desire to objectively describe scientific reality prompts the author to turn to statistics and authoritative opinions, as well as to apply the principles of logical interference in their explanations. However, as the material shows, the structure of the statement is not devoid of subjectivity, which manifests itself in unsubstantiated evaluative constructions and the verbalized opinion of the author of the scientific text.

The types of propositions and the various combinations of them that we have looked at in this paper contribute to the study of the principles of constructing a scientific text, create room for the further description of linguistic manipulation through explanation, and provide a new perspective on the subjective and objective prerequisites for determining the degree of benefit. The use of the linguistic methods of argumentation presented in a scientific text is determined by the values of the addressee, one of which is the need for the data that is being presented to them to be objective. In this respect, the objective nature of explanation represents a significant method of linguistic manipulation in professional communication.

Conclusions

Utilitarian evaluation plays a large role in engineering discourse. Communicative acts aimed at informing the reader about the results of scientific and technological progress take place in a pragmatic space, the specificity of which is conditioned by the value system of the addressee – and the addresser keeps this information in mind when composing a scientific text. The statement acts both as the result of speech activity and as a means of communicative manipulation that is aimed not only at conveying facts, but also at forming a certain opinion among a wide range of people who are involved in engineering. In this regard, the pragmatic prerequisites for evaluating the results of scientific and technological progress form the initial basis for choosing a strategy of speech behaviour.

The interaction between the addresser and the addressee in the process of reading a scientific article is a representative communicative act mediated by the circumstances of communication that aims to convey objectively factual data to the addressee. Furthermore, subjective factors are also woven into the structure of the scientific text, which is manifested in the author's fixation on expressing his or her own opinion, as well as in the choice of methods of argumentation within the framework of the explanation strategy employed.

The main task of the author of an article that describes technical research is to demonstrate the advantages of the latest developments of the scientific community, as well as to achieve a consensus among the parties involved on how to use these developments in practice. In this regard, utilitarian evaluation is an integral part of linguistic constructions. The evaluation of the results of engineering thought in terms of their benefit or harm is carried out in scientific texts through the use of special evaluative lexemes and arguments that serve to verify the grounds for the addressee's evaluation.

The analysis of language fragments presented in this paper through the identification of propositions allowed us to describe the specificity of the speech strategy of explanation, a hallmark of technical scientific texts. Our study revealed the presence of reasoned and non-reasoned language structures. References to authoritative opinions are used as evidence of the provisions set out by the author of a scientific text, and the explication of cause-and-effect relationships are used as a means of justifying the evaluation set out therein. Argumentation is replaced by a special evaluative lexeme when the status of the scientific publication is sufficient.

Thus, the rationality of presentation, the deliberate distancing of the author of the linguistic message from the evaluations set out in the scientific text (a consequence of the need for an objective description of the subject of scientific interest), as well as the focus on a proven or hypothetically possible result, all form the pragmatic foundations of utilitarian evaluation. These foundations predetermine the method of linguistic manipulation used on the recipient. The choice of method is determined by the addressee's need to receive reliable information. The propositions implied by the addresser as usually aimed at the addressee accepting the information on faith, bringing progressive ideas and the possible use of developments for the benefit of humanity to the mainstream. It would appear that linguistic manipulation in utilitarianism has a hidden character, while at the same time being an effective means of achieving the goals set by the scientific community.

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Conflicts of Interest:
The authors declare no conflicts of interest.

Received: June 13, 2023.
Accepted: August 30, 2023.

References:

Avdeeva I. B. 2005. *Inzhenernaja kommunikacija kak samostojatel'naja rechevaja kul'tura: kognitivnyj, professional'nyj i lingvisticheskij aspekty (teorija i metodika obuchenija russkomu jazyku kak inostrannomu) [Engineering communication as an independent speech culture: cognitive, professional and linguistic aspects (theory and methodology of teaching Russian as a foreign language)].* MGTU. (In Russian)

Azylbekova G. O. 2017. *Pragmatika ocenki (na materiale russkogo i nemeckogo jazykov) [Assessment pragmatics (based on the Russian and German languages)].* Kereku. (In Russian)

Dem'jankov V. Z. 1999. Interpretacija kak instrument i kak objekt lingvistiki [Interpretation as a tool and as an object of linguistics]. *Voprosy filologii [Issues of philology].* 2. P. 5–13. (In Russian)

Fjodorova L. L. 1991. Tipologija rechevogo vozdejstvija i ego mesto v structure obshhenija [Typology of speech impact and its place in the structure of communication]. *Voprosy jazykoznanija [Topics in the Study of Language].* 6. P. 46–50. (In Russian)

Galimova H. N. 2021. Semanticheskij sintaksis i propozicija kak edinica propozicionnogo analiza tekstov [Semantic syntax and proposition as a unit of propositional analysis of texts]. *Baltijskij gumanitarnyj zhurnal [Baltic Humanitarian Journal].* 10. 3(36). P. 255–258. (In Russian)

Issers O. S. 1999. *Kommunikativnye strategii i taktiki russkoj rechi [Communicative strategies and tactics of Russian speech].* The Omsk State University Press. (In Russian)

Kuznecov S. A., Skrebcova T. G., Suvorov S. G., Klement'eva A. V. 2019. *Lingvisticheskij analizator. Preobrazovanie teksta v metajazykovuju strukturu dannyh [Linguistic analyser. Converting text to a meta-language data structure].* The St. Petersburg University Press. P. 167–204. (In Russian)

Ljubavina A. J. 2009. Funkcional'no-pragmaticheskij analiz direktivnyh rechevyh aktov v agitacionnyh tekstah [Functional and pragmatic analysis of policy speech in campaign texts]. *Vestnik Cheljabinskogo gosudarstvennogo universiteta [Chelyabinsk State University Bulletin].* 27(165). P. 78–81. (In Russian)

Mustajoki A. 2006. *Teorija funkcional'nogo sintaksisa: ot semanticheskih struktur k mjazykovym sredstvam [Functional syntax theory: from semantic structures to language means].* Jazyki slavjanskoj kul'tury. (In Russian)

Pochepcov O. G. 1978. *Kommunikativnye aspekty semantiki [Communicative aspects of semantics].* Vishha shkola. (In Russian)

Savel'eva E. A. 2012. Struktura utilitarnoj ocenki (objekt, subjekt, osnovanie) [Structure of utilitarian assessment (object, subject, basis)]. *Vestnik Surgutskogo gosudarstvennogo pedagogicheskogo universiteta [Surgut State Pedagogical University Bulletin].* 6. P. 31–34. (In Russian)

Searle J. 1986. Klassifikacija illokutivnyh aktov [Classification of illocutive acts]. *Novoe v zarubezhnoj lingvistike [New in foreign linguistics]. Teorija rechevyh aktov* [Theory of speech acts]. 17. P. 170–195. Moscow: Progress. (In Russian)

Shnyakina N. J., Klyoster A. M. 2022. Subjektivnost' v nemeckom inzhenernom diskurse [Subjectivity in German engineering discourse]. *Sovremennye lingvisticheskie i metodiko-didakticheskie issledovanija [Modern Linguistic, Methodical, and Didactic Research].* 3(55). P. 23–34/. (In Russian)