

**Makhmetova D.M., Lugovskaiya E.I., Nessipbayeva Z.S.**

Assistant Professors of Al-Farabi Kazakh National University,  
Kazakhstan, Almaty, e-mail: djamilya\_gab@mail.ru

## ON THE FUNCTION OF ADJECTIVES IN SCIENTIFIC TEXTS

The article discusses the functions of adjectives in scientific-natural and scientific-technical texts. These functions were studied using the materials of the translation of scientific texts in Russian/English language system. The sentences and phrases with adjectives were classified by two criteria: the syntactic links of adjectives with other words; lexical and semantic peculiarities of adjectives playing the role of an attribute. According to these criteria the utterances with adjectives were divided into three groups: common utterances of a neutral adjective function; terminological phrases in which adjective is syntactically linked with terms; special utterances with adjectives being an emotional component. The methods of linguistic transformations of utterances were developed for a scientific text. According to these transformations neutral function is transforms into informative function. It is a linguistic technique which intensifies the degree of quality of an adjective by introducing adverb of an extent «very». The grammatical transformation of a sentence is the core of the second method. The third method is based on using stylistic technique of comparison. The informative function of an adjective in a scientific text is to evaluate objectively or express more precisely the essence of a scientific phenomenon expressed by a term. The informative function of an adjective is varied by lexical means and stylistic techniques.

**Key words:** term, adjective, word-characteristic, informative function, of adjective, neutral lexis, expressive lexis, special lexis.

Махметова Д.М., Луговская Е.И., Несипбаева З.С.,  
әл-Фараби атындағы Қазақ ұлттық университетінде аға оқытушылар,  
Қазақстан, Алматы қ., e-mail: djamilya\_gab@mail.ru

### Ғылыми мәтіндердегі есімдердің функциясы

Бұл жұмыста есімдердің ғылыми-жаратылыстану және ғылыми-техникалық мәтіндерде сөз сөйлеу функциясы зерттелген. Бұл зерттеудің негізінде орыс және ағылшын тіл арасында аудармашылық материалдар жатады. Тіл әдістермен есімдердің мағыналық ренкі шығарылған. Екі лингвистикалық критерий бойынша сөйлемдер дәл солай бөлінеді. 1. Есімдер термин сөздермен тікелей байланысты. Осындай сөз тіркестерге терминологиялық сөйлеу деп ат қоямыз. Есімдерге – термин үшін сипаттама сөз деп ат береміз. 2. Есімдер термин емес, бірақ басқа сөздермен байланыстырып көрсетілген болса, онда сөз тіркестерді әдеттегідей сөз тіркестер деп санаймыз.

Сол себептен есімдердің үш әртүрлі сөйлеу функциясы айқын анықталып табылады: маңызсыз бейтарап функциясы; маңызды терминологиялық функциясы; арнайы, көп мағыналық немесе мәнерлік (экспрессивті) функциясы. Екінші және үшінші жағдайларда есімдерге информативті сөз деп ат қоямыз. Бұл кезде есімдердің информативті функциясы ғылыми құбылыстарды ең жақсы және дәлірек бағалайды. Есімдердің информативті функциясы лексикалық құралдармен және стильдік тәсілдермен өзгертіледі. Сондықтан есімдерді орыс тілінен ағылшын тілге, немесе керісінше, ауыстырғанда, біріншіден олардың мәтіндердегі информативті функциясын анықтау керек. Сосын ғана әр сөзге ең дұрыс, эквиваленттілік аудармашылық мағына табылады.

Бұл жұмыста ғылыми мәтіндер үшін бірнеше тілдік әдістер арнайы мақсатпен пайдаланылған. Көрсетілген есімдерді қалай бейтарап функциядан информативті функцияға келтіруге болады.

**Түйін сөздер:** термин, сын есім, сипаттама-сөз, есімдердің информативті функциясы, бейтарап лексикасы, экспрессивті лексикасы, көп мағыналық лексикасы.

Махметова Д.М., Луговская Е.И., Несипбаева З.С.,  
старшие преподаватели Казахского национального университета имени аль-Фараби,  
г. Алматы, Казахстан e-mail: djamilya\_gab@mail.ru

### О функции прилагательных в научных текстах

Речевые функции прилагательных в научно-естественных и научно-технических текстах исследованы с использованием материалов перевода научных текстов в системе контактирующих языков русский/английский. Предложения и словосочетания с прилагательными классифицировали, используя два критерия: синтаксические связи прилагательных с другими словами; лексические и смысловые особенности прилагательных в роли определения. Согласно этим критериям, высказывания с участием прилагательных разделены на три группы: обычные высказывания с нейтральной функцией прилагательного; терминологические обороты речи, в которых прилагательные синтаксически непосредственно связаны с терминами; специальные высказывания с прилагательными. Для научного текста разработаны способы языковой реорганизации высказываний от нейтральной функции прилагательных к информативной функции. Это языковой прием усиления степени качества прилагательного путем введения наречия меры «очень». Грамматическая реорганизация предложения составляет сущность второго способа. Третий способ основан на использовании стилистического приема сравнения. Информативная функция прилагательного в научном тексте заключается в том, чтобы объективно оценить или выразить более точно сущность научного явления, описываемого термином. Информативная функция прилагательных варьируется лексическими средствами и стилистическими приемами.

**Ключевые слова:** термин, прилагательное, слово-характеристика, информативная функция прилагательного, нейтральная лексика, экспрессивная лексика, многозначная лексика.

### Introduction

The adjectives refer to the part of speech that represents the characteristic of the object. In the speech situations, regardless of the field of knowledge, the adjectives are linguistically connected with the words of other speech parts. The features of the speech situations related to natural and technical sciences can be characterized as «stylistic» and «informative». The purpose of denoting a feature is often explained by the need to mark something specific relating to the

object of speech, and is a condition for the correct perception of scientific information. The adjectives have valuable speech qualities. This is primarily due to their grammatical properties. In speech they provide the technique of the comparison by the characteristic and the technique of the characteristic quality. English and Russia have three grammar forms for adjectives: the original positive degree, the comparative degree, the superlative degree [1–4]. Adjectives grammatical properties of which allow creating speech structures with a comparison function of something by a particular feature are

called descriptive adjectives.

**Table 1** – Grammatical features of the comparison of descriptive adjectives

№	Language	Grammar form	Grammar techniques
1	Russian	Simple comparative degree	The addition of the suffixes «-ee/-ey, -e, -she, -zhe-».
2	Russian	Composite form	The addition of the words «boleee» или «menee».
3	Russian	Superlative degree	Adjectives with «samy», «naiboleee», «naimenee»
4	English	Simple comparative degree	The addition of the suffixes: er, ier.
5	English	Composite form	The addition of the words «more», «less».
6	English	Superlative degree	The adjectives with «the most», «the least».

The syntactic function of the composite shape is believed to be wider than that of a simple form. A simple form is the part of a predicate. The composite

form of the comparative degree is often used in the bookish speech in the function of an attribute. The term «characteristic» can express not only the quality of anything in speech communication. There

are relative adjectives in grammar. They denote other characteristic – relation, and this characteristic cannot be exhibited in some degrees. The degree of quality usually involves a subjective assessment of

the characteristic intensity. Adjectives are combined with a wide range of concrete nouns and easily create figurative meanings. Some relative adjectives are used in Russian and in English speech with a

figurative high-quality meaning.

**Table 2** – Additional lexical meanings of adjectives

№	Bookish speech: direct meaning, expressing the relation to the speech object	Bookish speech: the transfer of the direct meaning to other object to compare by quality and property
1	Barkhat. Barkhatnoe platye.	Barkhatny golos.
2	Salat. Salatnye tarelki.	Salatny tzvet.
3	Zip. Zipper. Zipper bags (a bag with a quick fastener).	Zipper reactions (scientific text: the reaction of rapid addition).
4	Liquid. Liquid soap.	Liquid chromatography (scientific text: the method of measurement).
5	Ring road	Carbon ring structure; ring electrode (scientific text: ring-like structures/ electrode).

In the natural-scientific and technical texts, as in any other text, the grammatical forms of the adjectives are often used. However, there are unique features in the construction of the speech structures with adjectives. The stylistic features of adjectives are related to the situations of communication. Depending on the purposes of communication adjectives may be used as neutral or informative words or words with emotional function [1]. In the aspect of the natural scientific and scientific-technical bookish speech adjectives can be considered as linguistic units, providing the following communication qualities: 1) neutral character of speech patterns: scientifically-developed, cultural language speech, corresponding to the concept of «scientific style»; 2) informative character of speech patterns: use of adjectives as tinting speech units in situations that are ambiguous on the correlation with reality; 3) stylistic features of the speech patterns aimed at the individualization feature: it is often neutral informative, informative and expressive character, emotional function is less used. The present paper is aimed at studying the functions of adjectives in scientific-natural and scientific-technical texts. The significance of this topic is connected with the issues of the equivalent translation of adjectives from Russian into English. The theory of equivalent translation makes a great emphasis on the lexical units which possess the properties of synonyms. When translating an adjective from one language into other language it is necessary to correctly evaluate an adjective function thought the whole text. The right choice

of a translation equivalent depends on it. In this case the author's intention and main task should be understood. The lack of studies on the given topic determines the novelty of our research. As the scientific speech development is an intermittent process.

### Experiment

The natural-scientific and technical texts, adjectives are frequently used in the role of an attribute. Grammar links between words in the speech structures should be noted. They may be different types (forms) of the language units – from phrases to sentences. Three aspects of the role of an attribute should be distinguished. The first aspect is everyday speech; the second aspect is terminological speech. Terminology speech introduces the words from adjective category into linguistic as mandatory components. Adjectives perform an informative function in relation to the term, or words of special scientific vocabulary. One can distinguish in a sentence the phrases that contain «terms» or the words of «special scientific vocabulary», and adjectives from the common lexis with a polysemantic meaning. Adjectives with the function being reduced to the role of an attribute in the form of «words – characteristics of the terms» cannot be removed from the text. They grammatically and stylistically distinguish specific, concrete, particularly important things, due to the use of terms or words of special vocabulary in this situation. This demonstrates the informative function of the adjective. At the same time it can

be of a neutral, informative or expressive character. In everyday speech overloaded by adjectives which is not connected with terminological vocabulary,

adjectives can be removed. At that the meaning of the text will not be affected. We will show this fact in the scientific speech, using different language units taken

from the scientific informative texts (Tables 3 and 4).

**Table 3** – Language properties of adjectives in scientific texts

№	Language unit	Adjective: type, form, function. Lexical unit.
1	The main thing in the compound sentence: «In order to understand the complex processes of soot formation adequate models are required.»	«Complex»: high-quality, original positive form. Commonly used.
2	Sentence fragment: «The material obtained in the course of the experiment, contains new – two kinds of ribbon structures.»	New»: high-quality, original form. Neutral informative. Commonly used. «Ribbon»: relative. Neutral informative. Commonly used.
3	Word combination: «Free static charges»	«Free»: high-quality, original form. Neutral informative. Commonly used.
4	Word combination: «cellular multiple laminar flamelets»; «a wrinkled laminar flamelet».	«Cellular»: relative. Informative expressive. Commonly used. «Wrinkled»: relative. Informative-Expressive / Informative and emotional. Commonly used.
5	Word combination: «Ring electrode».	Ring»: relative. Neutral informative. Commonly used.
6	Sentence fragment: «the taller laminar cone was still collapsed near the burner head».	«Taller»: a qualitative, comparative degree. Neutral informative / informative and expressive. Commonly used.

**Table 4** – Speech function of adjectives in natural – scientific and technical texts

№	Lexical unit	Speech technology: ordinary/terminological speech
1	The main thing in a compound sentence: «In order to understand the complex processes of soot formation adequate models are required»	Ordinary. Syntagma «complex processes».
2	Sentence fragment: «The material obtained in the course of the experiment, contains new – two kinds of ribbon structures.»	Terminological. Syntagma: «new-two kinds of ribbon structures».
3	Word combination: «Free static charges»	Terminological. Syntagma «free charges»
4	Word combination: «cellular multiple laminar flamelets».	Terminological. Syntagma: «cellular flamelets».
5	Word combination: «Ring electrode».	Terminological. Syntagma: «Ring electrode».

Thus, in the natural – scientific and technical texts the language properties of adjectives acquire communicative informative function, if they are grammatically and stylistically directly related to the essence of the thing which is expressed by terms or words of special vocabulary. Let's explain this conclusion by using modeling method to an uncertain situation, expressed by phrase «complex process». This phrase is shown in table 3. The adjective «complex» in the phrase «complex processes of soot formation,» is grammatically agreed with the word «process». The components of the phrase «soot formation», in the context of natural- scientific and

technical disciplines, has the status of «Terms» or the words of «special vocabulary» which are not related to the common lexicon. The sentence is grammatically connected with the verb «to understand.» Therefore, the adjective «complex», which the author of the scientific text uses to express his/her views on the nature of «soot formation» in a scientific experiment, is a stylistically-neutral. The sentence without the adjective «complex» does not lose its scientific sense: – «In order to understand the processes of soot formation adequate models are required.» The adjective «complex» from subjective speech zone can be converted into objective assessment of the phrase «soot formation» if there

are necessary adequate language constructions. The grammatical forms of adjectives, as well as stylistic devices of their usage in speech allow implementing this task. Informative function of the adjective «complex» can be achieved by the following linguistic methods: 1) enhancing the quality of the degree by the introduction of adverb of extent «very»: – «To understand the very complex processes of soot formation adequate models are required.»; 2) grammatical reorganization of the sentence: – «In order to understand the complexity of soot formation adequate models are needed.»; 3) usage of the stylistic device of comparison: soot formation «as «a model of a complex process»: – «In order to understand the processes of soot formation we need

*models* which are adequate to *the concept « complex process* ». The italicized speech patterns show grammatical and stylistic consistency between the phrase «soot formation» and the word «complex». Under these conditions, the adjective «complex» becomes a word characteristic for the term «soot formation». The speech pattern is transformed into a terminological speech construction in which the adjective function is to objectively evaluate and more accurately express the essence of the phenomenon of «soot formation».

The adjectives: important, significant, substantial, great are often used in scientific texts. It is a peculiar feature of the scientific style. This can be illustrated on the following examples from the

article in Russian [5, 137; 138]:

**Table 5** – Examples from scientific texts

Russian text	English variant
1. Сажеобразование – важный и постоянно изучаемый аспект горения.	1. Soot formation is an important aspect of combustion constantly being studied
2. Исследование образования и окисление сажи имеет особое значение.	2. The study of soot formation and oxidation is of a great significance.
3. Существенное практическое значение (фрагмент предложения)	3. Significant practical value (the sentence fragment)
4. Накоплен значительный экспериментальный материал.	4. The substantial experimental material has been collected.

The study of the dictionary entry has showed that the examples: 1-4 correspond to the speech situation of a polysemantic character [6,7,8]. The authors of the scientific texts frequently use the adjectives: important, significant, substantial, essential, vital, considerable, crucial and primary. These adjectives are used in the cases when it is necessary to show the specific opinion or attitude. Such adjectives as a rule possess synonym families. Their semantic peculiarities can be met in simple sentences in scientific texts. The target information of these sentences is to reflect the special subjective attitude to the problem. So an adjective function is perceived by the readership of a scientific text as factor of emotional impact. Such adjectives often produce an effect of a specific gesture.

### Results and discussion

The words of an adjective function have extensive and valuable speech qualities. Various communications, various stylistic criteria, various interlingual relations are capable of revealing

different functions of adjectives in oral and written speech. The structure of scientific information always subordinates a certain goal. To adequately express the idea and write some scientific thesis it is necessary to correctly understand word language context. The language context of a dictionary entry is an initial point in this research. The aspects of new usage of words in scientific texts can be determined based on it. The analysis of scientific texts in the process of their translation from Russian into English and vice versa showed the peculiarities of adjective usage. There were found out the following types of utterances: the common utterances with a neutral function of an adjective; terminological speech structures in which an adjective is syntactically linked with terms; specific that is special utterances in which adjectives are used with an increased intensity of a feature. The informative adjective function is to objectively evaluate and more precisely express the essence of a scientific phenomenon. The informative function is provided by adjectives which refer to different lexical units: neutral common lexis; colored lexis; scientific lexis; synonyms and antonyms, paronyms, homonyms; international

words. The results are proved by concrete examples. Adjectives: «static», «multiple», «laminar» in natural and technical sciences are treated as the units of scientific vocabulary, and therefore they are the organizers of the terminological speech. The adjectives «new», «ribbon», «free», «cellular», «wrinkled», «ring», «taller», which belong to the common lexis, perform informative function in scientific texts. They are the essential components of speech patterns. These are the word characteristics of the terms in the relation to the words of scientific vocabulary. The category of the word characteristics is expanded by grammatical derivation techniques. At the same time, «the word characteristics» can be classified as adjectives. Here are the examples of the speech patterns of scientific texts. Adjectives are italicized: *onion-like* fullerene nanostructures; *bell-shaped* curve; magnetism of *iron-containing* particles in the quartz matrix; *short-life* radicals; *free* radical mechanism; *the most striking* result; *staged* character of carbon nanostructures. In this case, grammatical techniques and grammatical derivation devices are speech stylistic devices that are typical of different situations, both with neutral and with colored vocabulary. Stylistic components «-shaped», «containing», «short», «staged» are used to assess shape, quality, time, sequence. Stylistically coloured words are «onion-like», «bell», «short-life», «striking».

### Conclusion

Thus it can be concluded that adjectives can perform both informative and stylistic functions in the scientific text. Today many authors of scientific articles prefer to use the words which are typical of

every day speech. This situation is clearly seen in the use of adjectives. For instance, such adjectives as wrinkled, ribbon, onion-like, bell-shaped, short-life, striking, are not typical of scientific speech they are more peculiar for ordinary speech. However in some scientific papers one can face these words used in the combination with the term, for example: ribbon particles, wrinkled flame, and bell-shaped curve. Using these adjectives in scientific speech the author turns scientific word combinations into colored speech patterns.

The main conclusions:

– The linguistic properties of adjectives in scientific-natural and scientific-technical texts acquire an informative function. The recognition of this function provides the equivalence when translating a scientific text from one language into other language.

– The informative function is formed in a scientific text based on linguistic characteristics: grammar of words, lexical parameters, and stylistic features.

– Based on a lexical – stylistic criterion the following functions of adjectives in a scientific text: neutral-informative function; informative-expressive function; informative specific function were found out.

– Based on syntactic links with other words in sentences the types of speech situations: common speech; terminological speech patterns were found out.

– The techniques of forming an informative function of adjectives in scientific texts enabled to choose more precise translation equivalents for Russian words: *osoby*, *znachitelny*, *sushestvenny*. These words are often used in scientific Russian

texts.

### References

- 1 Kasatkin L.L., Klobukov E.V., Lekant P.A. *Sovremenny Russkii yazyk*. [Modern Russian] Moscow: Prosveshenie, 2004. 304 p. (In Russian)
- 2 Eastwood J. *Oxford Practice Grammar*. Oxford: Oxford University Press, 2006. 440 p. (In English)
- 3 Vince M. *First Certificate Language Practice. English Grammar and Vocabulary*. 4<sup>th</sup> Edition. Oxford: Macmillan, 2009. 344 p. (In English)
- 4 Swan M. *Practical English Usage*. Oxford: Oxford University Press, 2005. 653 p. (In English)
- 5 Mansurov Z. A. *Sazheobrazovanie v processah goreniya*. (Obzor). [Soot formation in combustion processes (Review)] *Physics of combustion and explosion*. 2005. No 6. V. 4. Pp. 137 – 156. (In Russian)
- 6 Aleksandrova Z. E. *Slovar sinonimov russkogo yazyka*. [Dictionary of synonyms of Russian] Moscow: Sovetskaya enciklopediya, 1968. 600 p. (In Russian)
- 7 Ozhegov S.I. *Slovar russkogo yazyka*. [Dictionary of Russian] Moscow: OGIZ, 1949. 968 p. (In Russian)
- 8 *The Oxford Dictionary of Synonyms and Antonyms*. Second Edition. Oxford: University Press, 2007. 514 p. (In English)

### Литература

- 1 Касаткин Л.Л., Клобуков Е.В., Лекант П.А. Современный русский язык. – М.: Просвещение, 2004. – 304 с. (На русском)
- 2 Иствуд Д. Оксфордская Практическая Грамматика. [Oxford Practice Grammar] Оксфорд: издательство Университета Оксфорд, 2006. – 440 с. ( На английском)
- 3 Винс М. Первый Уровень овладения языком. Английская Грамматика и Лексика. [First Certificate Language Practice. English Grammar and Vocabulary] 4 издание. – Оксфорд: издательство: Макмиллан, 2009. – 344 с. (На английском)
- 4 Свон М. Практический Английский. [Practical English Usage] – Оксфорд: издательство Университета Оксфорд, 2005. – 653 с. (На английском)
- 5 Мансуров З.А. Сажеобразование в процессах горения. (Обзор). Физика горения и взрыва. – 2005. – №6, Т. 41. – С. 137 – 156. (На русском)
- 6 Александрова З.Е. Словарь синонимов русского языка. М.: Советская энциклопедия, 1968. – 600 с. (На русском)
- 7 Ожегов С.И. Словарь русского языка. М.: ОГИЗ, 1949. – 968 с. (На русском)
- 8 Оксфордский Словарь синонимов и антонимов. [The Oxford Dictionary of Synonyms and Antonyms] Второе издание. Оксфорд: Издательство Университета Оксфорд, 2007. – 514 с. (На английском)