Mental Peculiarities of Metaphor Formation in European Idioms: Mutual Influence and Common Features

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Abstract: The article describes the processes of nomination, which are relevant for modern linguistics and are based on metaphorization of reality. The aim of the article is to study the cognitive aspects of metaphorization in modern European languages. The article describes the process of metaphorization in language through the imposition of secondary meaning on the primary one; describes the process of forming a linguistic picture of the world that is unique for each language community; investigates metaphorization at different levels of language (lexical, phrasal, phraseological); describes the peculiarities of metaphorization of neologisms based on the analysis of corpora of English and Polish texts. The article is based on the syncretism of descriptive, comparative, synthesis and analysis methods, systematic method in combination with the method of generalization. It is shown that the modification of metaphorical models occurs mainly due to the involvement of neologisms as a source of metaphorization, the activation of such established semantic spheres as high technology, economics and finance, and mass culture in this function. In European languages, the main cognitive structures are dominated by substantive metaphor, whose function is to nominate new realities of the surrounding reality. Due to the analytical nature of the English language, a significant number of partial metaphors function in it, realized with the help of complex words and stable phrases. Metaphors-neologisms are found in different styles of speech: scientific, formal business, journalistic, colloquial. It has been established that the linguistic picture of the world presented in the metaphorical subsystems of English and Polish is anthropocentric in nature, since one of the most productive areas of metaphorization is the human being. It has been determined that in the field of communication, linguistic metaphor in English and Polish fulfills all the functions traditionally attributed to it, i.e. communicative, nominative, expressive and characteristic. In the studied European languages, all the traditionally distinguished types of metaphor are observed, i.e. metonymy, hyperbole, euphemism, periphrasis. Metaphor is used to evaluate reality, express the speaker's attitude to the surrounding realities of the world, and form the cognitive (mental) and linguistic worldviews of speakers.

Keywords: cognitive science; English; idiom; metaphor; Polish; worldview

Introduction

In contemporary linguistics, metaphor is a subject of interdisciplinary study, as the original literary category has become the center of scientific reflection for linguists, including cognitive scientists, educators, philosophers, and psychologists. A significant part of the facts of the surrounding reality is structured with the help of metaphors; metaphors are the basis of many lexemes, including terms and idioms. The metaphorization of the world by a native speaker is at the heart of the science of cognitive science, as it is a cognitive phenomenon that determines human thinking and provides understanding [1].

Modern cognitive science regards metaphor as one of the key mental operations, as a way of cognizing, describing and structuring the world, because a person thinks in metaphors, cognizes the world in which he or she lives with the help of metaphors, and also seeks to transform the linguistic picture of the world existing in the speaker's mind in the process of communicative activity. Metaphor is also a natural attribute of creative thinking [2]. Today, a cognitive paradigm has been established in linguistics, which has formed a view of metaphor as the most important mechanism of thinking. Metaphor realizes one of the most important functions of language, the cognitive one. According to Lakoff's theory, "metaphor allows us to understand rather abstract or inherently unstructured entities in terms of more concrete or at least more structured entities" [3]. Metaphor is a means of expressing the linguistic picture of the world and is considered through the characterization of the conceptual understanding of the world in the context of the addressee-text-addresser [4].

The emergence of a linguistic metaphor is due to the fact that a lexical item includes not only the denotative but also the connotative part of the meaning, which reflects associations, figurative layers, additional meanings and refers to expressive and often evaluative associations that have been fixed in the linguistic consciousness of native speakers [5]. The study of the metaphorization process through cognitive realities allows us to identify basic metaphorical models, the study of which helps to understand the linguistic picture of the world of native speakers, and thus the national mentality, peculiarities of worldview and world perception.

The purpose of the article is to study the cognitive aspects of lexical metaphorization in modern European languages. The study is based on the lexicon and corpora of texts in English and German. The article has an interdisciplinary character, as it is based on the syncretism of scientific knowledge in linguistics, cognitive science and philosophy of language. To achieve the goal, the following specific objectives were set:

- to critically analyze the literature that considers the role of metaphor in the process of naming and renaming,
- to describe the process of metaphorization of reality by means of language and the formation of a linguistic picture of the world that is unique to each language community;
- to study metaphorization at different levels of language (lexical, phrasal and phraseological)
- to describe the peculiarities of metaphorization of neologisms in the studied languages.

Literature review

The analysis of scientific sources shows that anthropocentric linguistics leads to an increased interest of researchers in studying the process of metaphorization and its role in the formation and reproduction of the linguistic world picture. For linguistic cognitive and linguistic-cultural studies, the most promising is the analysis of metaphorization on the basis of those semantic groupings that are associated with the naming of objects that characterize thematic and conceptual areas that are important for modern native speakers. The main areas of this research include the following:

- studies that examine the cognitive aspects of metaphor, in particular semantic and cognitive metaphorical models [4,6];
- studies that examine the mental processes of metaphorization [7];
- studies that investigate metaphor in poetic discourse [8-11];
- studies that focus on metaphorization in neologisms [12], phraseological units [13];
- studies in which metaphor is studied in the context of cognitive science and corpus linguistics [14-16].

Madsen [17] formed a cognitive theory of the nature of metaphor, and Kövecses [18] proposed an extended theory of conceptual metaphor, because metaphor always arises on the basis of conceptualization of the surrounding reality, conceptualization of the world as a whole. According to Gibbs [19], the specificity of the linguistic worldview reflected in its metaphorical subsystem can be established only by comparing different languages.

Beknazarova et al. [20] believe that metaphor, which manifests the principle of human analogical thinking, occupies one of the central places in the cognitive direction of linguistic research. Cognitive theory considers metaphor as a means of conceptualizing reality, as a basic mental operation that combines different conceptual spheres to explain, characterize, and cognize one of them with the help of another.

Lypchanko-Kovachyk and Sidun [21] investigated the relational links between metaphor and foreign language acquisition. Burmeister [22] investigated the way of visualizing cognitive metaphors, which are a complete visual tool, for use in special languages. Despite a significant number of articles on metaphorization, the issue of cognitive aspects of this process has not been studied sufficiently, so the process of metaphorization of neologisms as one of the ways of nomination needs further research, because new words reflect the state of mind of contemporaries and the way they think, so tracking this process will help to better understand the peculiarities of the conceptualization of the world by modern man, in particular Europeans.

Methods

The methodology used in this article is based on a combination of several research methods, including the following:

- descriptive method (when describing the process of metaphorization in language, identifying key research questions);
- the method of synthesis and analysis (when analyzing the main sources of metaphorization);
- comparative method (when comparing the primary and secondary (metaphorical) meaning of a term);
- systematic method in combination with the method of generalization (to formulate the conclusions of the study).

The empirical basis of the study is linguistic units (lexemes, phrases) functioning in literary English (British version) and Polish with the involvement of units of special terminological systems, mass media, and the Internet. The article pays special attention to neologisms in the studied European languages. These units are represented either in dictionaries of neologisms or in oral and written texts.

Results

The feature underlying the metaphorical transfer of meaning is not always relevant to the semantic structure of the word being reinterpreted, is not always easy to isolate and does not explicitly link the metaphorical meaning to the original one. Sometimes the dependence of the metaphorical meaning on the original one is determined not by the repetition of the elements essential for the nomination, but by the reflection of associative and representative features associated with the ideas about phenomena and objects. Thus, when comparing the interpretation of basic and figurative meanings, one may not find a connection with the quality or image on the basis of which the meaning of a word or phrase was transferred or expanded. In general, the process of metaphorization is as follows: the primary meaning of a word is formed around the seven, and then the primary meaning can be reinterpreted by native speakers and acquire secondary, metaphorical meanings. In general, this process can be represented as follows (Figure 1):
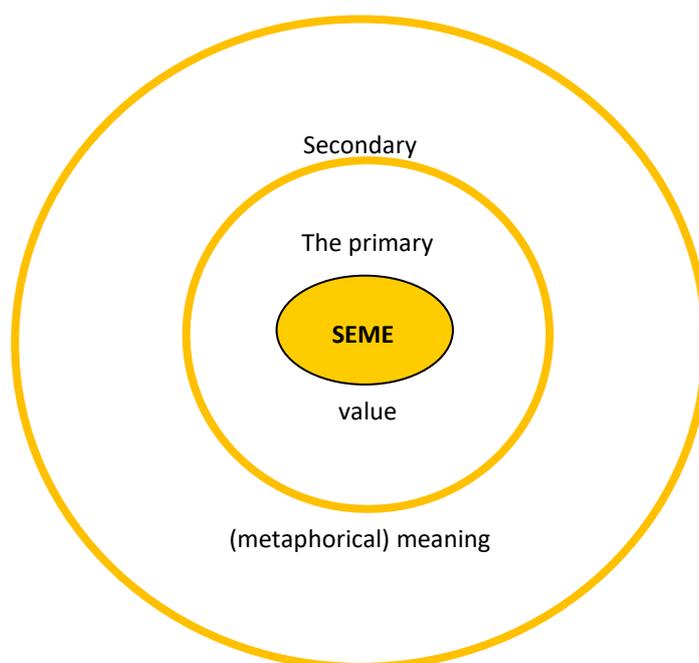
Figure 1. The process of lexeme metaphorization
Source: developed by the authors

Metaphorization is the main way of forming idioms. For example, the idiom "lame duck" in modern English, including political discourse, is most popular today to express a disparaging designation of an unpopular politician who will definitely not be re-elected. Obviously, in the case of the metaphor "a lame duck", the transfer of meaning occurred on the basis of similarity by association. Association is the main form of interconnection not only between sensations, but also between perceptions, ideas, thoughts, feelings, and actions of a person. Thus, a metaphor is a cognitive and semiotic model according to which human consciousness, based on the existing content of a sign, forms a new idea. Metaphor endows a word with the ability to express a new meaning and perform the function of secondary nomination.

In modern English, there are a significant number of animalistic verbs whose cognitive nature is not described, such as *beef up, chicken out, alligator, cock, crow*, and others. There are several types of cognitive metaphors: orientational, ontological, and structural. Orientation metaphors are based on a person's physical and cultural experience, related to spatial orientation, with contrasts such as "top – bottom", "inside – outside", etc., for example, *I'm feeling up*.

Ontological metaphors reflect human experience, allowing us to consider intangible entities (ideas, emotions, events, actions) as material. For example, *to change horses midstream* in economic terminology means to make changes in business by being involved in market activities or *to bull a stock to new highs* - to raise the price to new highs. Structural metaphor is based on the comprehension and experience of phenomena of one kind in terms of phenomena of another kind. These concepts structure human perception, thinking, and action. For example, *He shot down all of my arguments*.

The process of metaphorization occurs not only at the lexical level, but also at the phrase and phraseological level. An example of the metaphorization of a phrasal verb in English is the infinitive of the verb *beef up*, which means "to strengthen, reinforce". The semantic structure of the source is based on the meaning of the word beef (beef cattle) and includes the "strength" associated with the characteristics of this animal. This results in the verb *to beef up*, which is the result of the conversion of the noun beef with the addition of *up*, which intensifies its figurative meaning. The "sphere of source" is not the prototypical meaning of the verb, but the meaning of the noun *beef*, which is correlated with an animal (bull, cow).

As the analysis has shown, metaphors-neologisms permeate all semantic spheres of the studied languages with varying degrees of intensity. However, they are most productive in the socio-political and economic spheres, as well as in the sphere of high technologies, the sphere of artifacts and the sphere characterizing man as a social and mental being. There are much fewer metaphors characterizing man as a physical being. In the field of high technology, along with abbreviation, metaphorization is a major source of computer terms and professional jargon. This is a key way of semantic word formation in this relatively new field of knowledge. The leading position in this field belongs to English, the language of international communication and the Internet. The number of metaphors and neologisms in this area is very large, for example, *spam, surf the Internet, sleep mode, upload, download, worm*.

The analysis showed that metaphors and neologisms are found in different styles of speech:

- scientific style (*blot* - a method of transferring molecules from a gel-like state to a stationary state under the influence of an electric field);
- official business (*creeping inflation* - slow inflation);
- journalistic (e.g., *ethnic cleansing* - killings for ethnic reasons);
- colloquial speech (*sweet* - kind).

The most active in this regard are youth and computer slangs that belong to the declassified elements (e.g., *sticky site* – a popular site; *memory hog* – a person using a program that requires a large amount of memory, while other network users have problems with their computers). The emotional and expressive coloring of neologisms is quite diverse. Terminological spheres are naturally replenished with neutral metaphors, but colloquial speech, slang and journalistic style are more characterized by emotionally expressive units (*traffic evaporation* – a decrease in traffic density in a metropolis; *show pony* – a person of attractive appearance, especially an artist who likes to be in the spotlight). Metaphorization usually involves one of the words of a phrase or one of the bases of a compound word. A new meaning is formed for the word and the phrase as a whole, i.e., from the semantic point of view, such units are indivisible, for example, *species barrier* – immunity, *spyware* – software designed to monitor the actions of a computer user: intercepting mail, input information, passwords and commands, *junk food* – food that is harmful to health (literally: junk + food).

Attributive and adverbial metaphors are not so widely used in English. It is mainly used in the formation of generalized characteristics of people or events with positive (*massive, mad, ill*) or negative connotations

(*colorless, not sharp, bog-standard, pear-shaped, dirty*). Negative evaluation prevails, as this type of evaluation is the most common in everyday speech, slang, and journalism.

The vast majority of neologisms and technical terms in Polish are formed by metaphorization. For example, the word "*chmura*" (cloud) in the meaning of *cloud computing* illustrates how a concrete natural image is projected onto an abstract digital environment. Similarly, "ślad cyfrowy" (digital footprint) metaphorically conveys the idea of data left on the network as footprints on the ground.

The cognitive metaphor "czarny ekran" (black screen) describes a situation when a device stops functioning - although literally it is only the color of the display, in the user's mind it is a symbol of the system's "death". Another example is "zawiesić się" (to freeze), which describes the state of technology, but is taken from a physical action in space. Such metaphors are actively rooted in the linguistic consciousness of speakers and become part of everyday techno-cultural discourse [23]. Their emergence and spread is evidence of the language's adaptation to new cognitive and technological challenges.

In Polish, most neologisms are metaphorical calques from English, especially in the field of technology. For example, the following neologisms are found in Polish: *ikona, koszyk, zainfekowany, leczenie, robak, gorąca linia, zamiatanie, pranie pieniędzy, wstrzykiwanie pieniędzy, czarne pieniądze, załamanie cen*. As the analysis has shown, this phenomenon occurs in various functional and stylistic areas of the Polish language and is systemic. This is due, on the one hand, to the fact that computer English terminology has become international for this sphere of reality (and calquing is one of the productive ways of representing it), and, on the other hand, to the fact that English often becomes the language of communication on the Internet: Polish users in informal speech prefer to use a metaphorical calque rather than a borrowed term as it is more expressive (cf. *robak, zainfekowany komputer*).

In addition, the metaphor of a calque is used very regularly to characterize the economic and financial sphere, especially in journalistic speech. Since the process of globalization primarily involves the economy and means of communication, it is here that Polish economists, journalists and politicians look to English as a standard. The use of a metaphor-copy rather than a simple lexical borrowing is again related to the possibility of preserving the imagery and expressiveness of the English source metaphor (cf.: *Gospodarka o obiegu zamkniętym, ucieczka kapitału, złoty miliard*).

Thus, the process of metaphorization in both English and Polish occurs at several levels: first of all, lexical, as well as phraseological and even syntactic, because the wider context, i.e., the sentence, is important for determining the secondary metaphorical meaning (Table 1).

Table 1. Levels of realization of the metaphorization process in English and Polish

Language levels	An example in English	An example in Polish
lexical	**Break the ice** - to start a conversation, relieve tension. **A heart of stone** - to be cruel or indifferent.	**Złote serce** - "heart of gold" - a kind, sincere person. **Niebo w gębie** - "heaven in your mouth" - something very tasty.
phraseological	**The world is your oyster** → all possibilities are open to you. **Hit the books** → to start studying hard.	**Czuć pismo nosem** - "to smell the letters with your nose" → to anticipate something bad, to be alert. **Być cieniem samego siebie** - "to be a shadow of oneself" → to look tired, not the same as before.

| syntactic | When she walked into the room, **all eyes were on her** (artistic style).
After the breakup, he was **a shadow of his former self** (conversational style) | Po tylu latach pracy, ona naprawdę ma **złote ręce**. *(Metaphor: "złote ręce" - extremely skillful, skillful.)*
Kiedy usłyszał tę wiadomość, **ziemia usunęła mu się spod nóg**. *(Metaphor: "ziemia usunęła mu się spod nóg" - was stunned, lost his footing.)* |

Source: developed by the authors

The main types of metaphors in English and Polish are as follows:

1. euphemisms (in Polish: *ruch cen* (price increase, price rise); przejściowe *trudności* (economic crisis); in English: *to pass away* - to die, *to be between jobs* - unemployed, *senior citizen* - old);

2. hyperbole (in Polish: *wylecieć na zbity pysk* (to punish, to dismiss); *znaleźć się na ulicy, znaleźć się na bruku* (to lose a job) in English: *a million times* - exaggeration of the number, *to eat a horse* - to feel very hungry);

3. metonymy (in Polish: *biały kołnierzyk* (a middle-level employee engaged in mental work); *ręce do pracy* (working hands)); in English: *Hollywood is obsessed with sequels*, *where Hollywood is a movie industry, not a city*; *The White House issued a statement* - the White House instead of the US Presidential Administration).

Discussion

We agree with the position of Boys-Stones [24] that the productivity of metaphorical innovations is related to the fact that this method of semantic derivation implies the presence of a well-conscious internal form. As a result, metaphors-neologisms become one of the forms of representation of modern linguistic pictures of the world of native speakers. In addition, the use of this method of nomination when referring to high-tech devices and processes allows a person to make the world of high technology "his or her own".

We agree with the scientific conclusions of Kravets et al. [8] that metaphor is one of the main ways of nominating and creating artistic images, as well as generating meanings, nominating and creating artistic images, and generating new meanings, reflecting the results of figurative cognition of reality and the construction of a new reality. "Anthropocentric and cognitive approaches to the interpretation of linguistic phenomena help to better understand the essence of the process of metaphorical transfer. The cognitive approach to the analysis of metaphor occupies a leading position in modern metaphor, but many aspects of cognitive theory are still under debate" [8].

We believe that Remias [25] is partially right, as he considers extralinguistic reasons to be the main reason for the use of metaphorical innovations. The development of high technologies and their widespread use in all spheres of life, globalization processes in the economy, politics, science and culture, as well as socio-political and economic changes within the country, are reflected in the lexical and semantic systems of languages. In addition, the productivity of metaphorical innovations is related to the fact that this method of semantic derivation implies the presence of a well-conscious internal form. This allows native speakers to clearly identify the main conceptual features attributed to a new phenomenon and express their attitude towards it.

It is important to emphasize the advantages that the process of metaphorization provides to native speakers and people learning a language as a foreign language. Huang et al. [26] are right that metaphors-neologisms are becoming one of the forms of representation of modern linguistic worldviews of European ethnic groups. The use of this method of nomination when referring to highly technical devices and processes allows a person to make the world of high technology "his or her own" [27]. In particular, in European languages, the largest number of metaphors-neologisms is recorded in such semantic areas as the terminological and slang component of the high-tech vocabulary, social, economic, political and general household vocabulary.

The controversial issues of the chosen topic that require further discussion are the following

1. determining of the role of cultural context in the formation of metaphorical concepts;
2. the extent to which universal concepts are equally realized in different languages - genetically related and unrelated;
3. the persistence of metaphors in the cognitive memory of native speakers;
4. difficulties of interlingual translation of metaphors.

Conclusion

The study showed that metaphor is not only an important approach to thinking, but also a component of the human conceptual system. The algorithms of our worldview and experience are represented metaphorically, so it is appropriate to consider metaphor through the prism of cognitive linguistics. The linguistic picture of the world presented in the metaphorical subsystems of the English and Polish languages is anthropocentric in nature. Firstly, one of the most productive areas of metaphorization is the human being. Secondly, in the outside world, metaphorical nomination is given primarily to realities that are significant for society as a whole and for a particular person in his or her everyday life. In English, a comfortable and healthy lifestyle and entertainment are of particular importance, while in Polish, economic and social innovations are of particular importance. Thirdly, the sphere of high technologies is personified in both languages: a computer and complex electronic devices are perceived as personalities with whom a person enters into communication.

The modification of metaphorical models is mainly due to the use of neologisms as a source of metaphorization, the activation of such established semantic spheres as high technology, economics and finance, mass culture and the entertainment industry in this function. In terms of structure, both languages (English and Polish) are dominated by substantive metaphor, as it performs the main function of neologisms for naming new realities. The structural specificity of English also determines the structure of metaphorical subsystems. For example, the analytical nature of the English language leads to a large number of partial metaphors (they are realized at the level of compound words and stable phrases). The grammatical composition, structure and typology of metaphors-neologisms in English reflects, on the one hand, the specificity of neologisms in general (naming new realities - predominance of substantive vocabulary), on the other hand, the specificity of the general structure of the English language as an analytical language (frequency of formation of complex words and phrases, phraseological units). The following pattern can be identified: phrases are more often formed on the basis of complete metaphorization (rethinking of the phrase as a whole), compound words on the basis of partial metaphorization (rethinking of one of the roots).

In the sphere of communication, linguistic metaphor in English and Polish fulfills all the functions traditionally attributed to it, i.e. communicative, nominative, expressive and characteristic. In the studied European languages, all the traditionally distinguished types of metaphor are observed, i.e. metonymy, hyperbole, euphemism, periphrasis. Both erased and living metaphors are involved in the formation of business communication phraseology. The majority of phraseological units in these languages are built through metaphorization of reality, and imagery is observed even in terms, despite the fact that they should strive for accuracy and unambiguity by their nature. Through the metaphors involved in their formation, an assessment of reality is realized, the speaker's attitude to the surrounding realities of the world is expressed, and the cognitive (mental) and linguistic world pictures of native speakers are formed.

Prospects for further scientific research are the study of the process of metaphorization in individual terminology systems in a comparative aspect, as well as the comparison of the features of this process in different languages, including unrelated ones.

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