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Metaphors in "The Elements of Language" by E.Sapir

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Abstract

The research is aimed at identifying metaphors and building metaphorical models underlying the scientific article on linguistics "The Elements of Language" by E.Sapir on the grounds of cognitive linguistics. It also provides classification and analysis of the metaphors used in the scientific text under question and correlation of the researcher's metaphorical models with the core ones in Linguistics. The methodology is based on the cognitive principle that each scientific text has a sense productive structure, derivative from a scientific cognitive and communicative situation, with particular stages of sense development represented in all subtexts of the scientific text. Cognitive and linguistic analyses are procedures used to identify the subtexts, metaphors (Steen 2002), to analyse and classify the latter and to build metaphorical models. The analysis revealed that E.Sapir uses mostly three kinds of metaphors: dead, conventional scientific and original (his own). Dead metaphors dominate in all the subtexts of the article. The most frequent and sense developing metaphorical models are the ones referring to Human and Nature and to Human and Results of Labour.

Keywords: metaphor, metaphorical model, scientific text, subtext, linguistics, sapir

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1. Introduction

In contemporary metaphor studies metaphors are regarded as indispensable academic and scientific tools integral both to thought, speech and action. But metaphors are also meta-instruments for study of scientific activity products, particularly for a researcher's views development, conception authenticity, etc. Furthermore, the number and quality of metaphors used in the scientific linguistic text determine identification of metaphorical models studied within the framework of the current research as patterns to follow in order to get similar, but not identical, intellectual results. Built metaphorical models can coincide or not with the core metaphorical models of the research area. In Linguistics the core ones are the following: Human as a Center of Universe, Human and Nature, Human and Results of Labour, Human and Society.

The main area of this study is cognitive linguistics. The research is aimed at identification of metaphorical models underlying the scientific article "The Elements of Language" by E.Sapir (Sapir 1921). The obtained results enable us to build metaphorical models, and identify if they refer to the core metaphorical models in Linguistics. The methodology used in the research can be used by teachers to identify a student's acquired and personal knowledge in a research paper on the Humanities.

2. Literature review

Metaphor has been studied for centuries but primarily the scholars of the XX-XXI centuries pay special attention to it investigating metaphor as a means of creation and comprehension. Metaphor's structure, functions and classifications are usually based on patterns borrowed from fiction or everyday discourse. In their explanation researchers combine linguistic and cognitive-communicative approaches moving from the way a person uses language to a mode of thinking and vice versa. Metaphor was regarded as a simile with the structure combining a tenor, vehicle and ground (Richards, 1971), a result of interaction of properties of the focus and the frame (Black, 1962); metaphor is studied as part of corporal and mental activity projected on language and resulted from domains mapping (Lakoff, 1993), within the framework of double score blending based on integration (Fauconnier & Turner, 1998), etc. The analysis of numerous works devoted to metaphor reveals that scholars share the following ideas: metaphor is intrinsic to all types of discourse, it is a means and result of a human's activity in all spheres and it evokes infinite interpretations. All these properties are also ascribed to the scientific metaphor which models the virtual world uncovering the scholar's metaphysical world. Scientific metaphor is research oriented and open to inductive development (Boyd, 1979), it represents the unknown in the terms of the known (MacCormac, 1976), triggering cognition and communication in the sphere of science.

2.1 Scientific Text

In science metaphors are determined by many factors among which is a complex interaction of personal knowledge as a result of a person's activity in all spheres of life and scientific knowledge obtained from a particular field of knowledge. Both types of knowledge are structured in accordance with the dominant paradigm and presented in the form of a scientific text. The latter is built on the productive model of scientific cognition and communication which comprises a problematic situation, problem, idea, hypothesis, substantiation and deduction (Kozhina, 2002), causing sense production in the text. The problematic situation arises when the researcher identifies mismatched facts of existing knowledge, the problem deals with formulating the cognitive question, the idea presupposes search for a possible intuitive answer, the hypothesis contains an answer based both on logic and intuition, substantiation is a detailed logic answer and deduction is a final researcher's answer. These parts of the model determine the specificity of scientific subtexts as components of the scientific text constructed to develop the conception.

The problematic situation and problem are presented in the problem formulating subtext, the idea and hypothesis – in the hypothetic subtext, substantiation – in the substantiating text and deduction – in the deducing subtext. The problem formulating text represents a gap in existing knowledge that causes a research question. This subtext has numerous terms from theories, among which there are conventional scientific metaphors. The hypothetic text gives an answer to the problematic question in the form of the researcher's terms and their definitions logically organized. The substantiating text is characterized by the researcher's metaphorical terms in complex sentences with long logical chains. In the deducing text the researcher outlines the chosen concept and gives the final answer to the problematic question using lexical units denoting righteousness.

Our study of metaphors in various scientific texts revealed that researchers usually use three types of metaphors: conventional scientific metaphors denoting existing knowledge shared by a scientific community, dead metaphors, mapping the mental world and noticed by linguists, and a researcher's original metaphors which create and convey new knowledge. The analysis of these three types of metaphors allows constructing metaphorical models and tracing the domains which are used for new knowledge production. Our view on the scientific metaphor analysis allows to trace at what stage of cognition each researcher produces knowledge and to what extent, as each subtext represents different degrees of scientific sense development in the three kinds of metaphors.

3. Methodology

The methodology of the research is based on the cognitive principle that each scientific text has a sense productive structure, derivative from a scientific cognitive and communicative situation. It is represented in the subtexts of the scientific text by metaphorical terms which are defined and correlated with the existing ones. A system of metaphorical terms determines the conception advancement in a form of the metaphorical model. To identify the metaphorical models of the article «The Sounds of Language» by E. Sapir the following steps are undertaken: 1) identification of the problem formulating, hypothetic, substantiating and deducing subtexts of the article under question; 2) identification and analysis of metaphors in the subtexts using G.Steen's technology (Steen, 2002) classification of metaphors; 4) metaphorical models construction; 5) inference about correlation of E.Sapir's metaphorical models with the ones of Linguistics.

4. Analysis of Text

The conceptual and linguistic analysis of the text «The Sounds of Language» shows that the text conventionally comprises problem formulating, hypothetic, substantiating and deducing subtexts. At first, E. Sapir addresses the problem of sounds as shown in the excerpt from the problem stating subtext in (1) below:

(1)… the single sound of articulated speech is not, as such, a linguistic element at all. For all that, speech is so inevitably bound up with sounds… .

This is strengthened by the use of such binary oppositions as "speech – language", "a sound – a linguistic element", "general consideration – detailed survey", "too technical – loosely related", "comparatively small – far greater", and "a sound – a letter". What causes the problem of sounds according to E. Sapir is the naïve feeling that a language is built up of a comparatively small number of distinct sounds whereas phonetic analysis convinces one that the number of clearly distinguishable sounds is far greater than the speaker recognizes. Specifying the problem situation, the scholar also refers to the feeling the average speaker has of a foreign language. The main challenge in acquiring a practical mastery of a foreign language is an accent that gives the language its "air of strangeness". The accent may not have seem so challenging in the problem stating subtext, if the author had not used metaphorical expressions as shown in (2) below:

(2) As for languages of foreigners, he generally feels that, aside from a few striking differences that cannot escape even the uncritical ear, the sounds they use are the same as those he is familiar with but there is a mysterious "accent" to those foreign languages, a certain unanalyzed phonetic character, apart from the sounds as such, that gives them their air of strangeness.

An analysis of the linguistic means in the problem stating subtext reveals that such an effect is also brought about by the deployment of adjectives like "largely illusory", "the remotest", and "curiously elusive". E. Sapir makes an abundant use of undefined linguistic terms in this subtext: "language", "speech", "a linguistic element", "sounds of language", "phonetics" which seem to provide links between this scientific text and the existing linguistic literature.

Contrasting the naïve feeling of a language and phonetic analysis makes it possible to assume that this naïve feeling is illusory and the number of sounds and nuances of sounds is far greater. The hypothesis is exemplified by looking at the use of sounds by English speakers and by comparing phonetic systems of English and Russian as shown in (3) and (4) below:

(3) Probably not one English speaker out of a hundred has the remotest idea that the t of a word like sting is not all the same sound as the t of teem, the latter t having a fullness of "breath release" that is inhibited in the former case by the preceding s; that the ea of meat is of perceptibly shorter duration than the ea of mead; or that the final s of a word like heads is not the full, buzzing z sound of the s in such a word as please.

(4) Even so simple and, one would imagine, so invariable a sound as m differs in the two languages. In a Russian word like most "bridge" the m is not the same as the m of the English word most; the lips are more fully rounded during its articulation, so it makes a heavier, more resonant impression on the ear.

Having proved that "a complete inventory of the acoustic resources" of all the European languages is "unexpectedly large", E. Sapir refers to languages of Africa, aboriginal America and Asia in order to convince his addressee that the range of possible speech sounds is indefinitely large.

Another question that arises in the hypothetic subtext is the important question of the dynamics of phonetic elements. While it is possible to assume that two languages may, theoretically, be built up of the same series of consonants and vowels, even in this case they produce utterly different acoustic effects. E. Sapir shows that this is due to such dynamic features as the pitch differences, stress, syllabifying and quantity. Moreover, it is noted in the hypothetic subtext that the objective comparison of sounds in different languages is of any psychological or historical significance only if it is based on functioning of these sounds in actual speech. The behavior of sounds in actual speech determines their so-called phonetic "values". Thus, E. Sapir gradually broadens the scope of his hypothesis about the sounds of language to include European and then Non-European languages and to finally shift emphasis from objective to functional differences between sounds.

The substantiating subtext can be logically divided into three parts. In the first part, the author exemplifies distinctions between sounds in one and in different languages in order to show that phonetic elements of one language have no exact analogue in another language:

(5) I have gone into these illustrative details, which are of little or no specific interest to for us, merely in order to provide something of an experimental basis to convince ourselves of the tremendous variety of speech sounds.

The second part of this substantiating subtext combines reasoning and description. Among the reasons why the total number of possible sounds is greatly in excess of actually used ones were our habit conceiving the sound as a simple and unanalyzable impression and rigidity in articulation:

(6) One reason why we find it difficult to believe that the range of possible speech sounds is indefinitely large is our habit of conceiving the sound as a simple, unanalyzable impression instead of as the resultant of a number of distinct muscular adjustments that take place simultaneously. … Another reason for our lack of phonetic imagination is the fact that … the

muscles of our speech organs have early in life become exclusively accustomed to the particular adjustments and systems of adjustment that are required to produce the traditional sounds of the language.

The outline of the organs of speech and their activity conditioning speech sounds resulted in the organic classification of sounds accounting for practically all the sounds of language.

Finally, the dynamics of the phonetic elements were discussed. It is to be noted that in this part of the substantiating subtext an abundant use of modal verb may (7 times in one paragraph) and modal words was made:

(7)Two languages, may, theoretically, … .

(8)One of them may not recognize… the other may note … .

(9)Or, again, the pitch differences … may not affect the word as such, but, as in English, may be a more or less random… .

(10) Most important of all, perhaps, … .

Such an abundant use of linguistic means with the meaning of possibility may be explained by the construction of new knowledge from old knowledge:

(11) We have already seen, in an incidental way, that phonetic elements or such dynamic features as quantity and stress have varying psychological "values". … Further investigation would yield the interesting result that … The objective comparison of sounds in two or more languages is, then, of no psychological or historical significance unless these sounds are first "weighed", unless their phonetic "values" are determined.

Unlike the terms in in the problem stating subtext, the term "phonetic value" is thoroughly considered and exemplified as shown below:

(12) The English ts of hats is merely a t followed by a functionally independent s, the ts of the German word Zeit has an integral value equivalent, say, to the t of the English word tide.

(13) … but the difference, to the consciousness of an English-speaking person, is quite irrelevant. It has no "value".

(14) If we compare the t-sounds of Hinda, … , we find that precisely the same difference of articulation has a real value.

(15) In other words, an objective difference that is irrelevant in English is of functional value in Hinda.

The deducing subtext concludes these considerations:

(16) These considerations as to phonetic value lead to an important conception.

The naïve feeling of the sounds of language is explained by the concept of phonetic value. Being conscious only of relevant distinctions between the objective sounds, the naive speaker does not recognize all distinguishable sounds and nuances of sounds because they do not carry any specific phonetic value. Besides, the establishment of a more restricted "inner" or "ideal" sound-system sheds light on the bindings between speech and sounds. Hence, the problem stated in the problem stating subtext is successfully solved in the deducing subtext.

4.1 Analysis of Metaphors

The analysis of the metaphors identified in the subtexts of the given scientific text revealed three types of metaphors: dead metaphors (excerpts (17) and (18) below), conventional scientific metaphors (in (19) and (20) below) and the author's metaphors (as shown in (21) and (22) below).

(17) Experience has shown that neither the purely formal aspects of a language or *the course of its history* can be fully understood without reference to the sounds in which this form and this history are embodied.

(18) *The point may be brought home* by contrasting the comparative lack of freedom of voluntary speech movements with the all but perfect freedom of voluntary gesture.

(19) One of them may not recognize striking variations in the length or "quantities" of the phonetic elements, *the other may note such variations most punctiliously* (reference to Wilhelm Wundt).

(20) These dynamic factors, in their totality, are as important for the proper understanding of *the phonetic genius of a language* as the sound system itself, often far more so (reference to Wilhelm von Humboldt).

(21) That its "idea" is never realized as such in practice, *its carriers being instinctively animated organisms, is of course true of each and every aspect of culture*.

(22) One cannot sing continuously on such a sound as b or d, but one may easily *outline a tune on a series of b's or d's in the manner of the plucked "pizzicato" on stringed instruments*.

Table 1 summarizes the use of metaphors in the subtexts of the scientific linguistic text «The Sounds of Language».

Table 1. Types of Metaphor in «The Sounds of Language»

Subtext	Dead Metaphor	Scientific Conventional Metaphor	Author's Metaphor
Problem formulating	12	-	4
Hypothetic	9	-	7
Substantiating	61	2	45
Deducing	7	1	6

Throughout the problem formulating subtext, the linguist made use of metaphors 16 times. Only 25 % of metaphors in this subtext are the author's metaphors. Meanwhile, 75 % of the metaphors are dead or conventional ones. This may be easily explained by reference to the old knowledge and contrasting it to the new knowledge in the problem formulating subtext. Among the four subtexts, the author's metaphors are used most often in the substantiating text. Their use makes about 40 % of the metaphors in the substantiating subtext as compared to nearly 55 % of the conventional metaphors. A comparatively large number of the author's metaphors in the substantiating subtext stand for the new knowledge produced and systematized in the arguments and empirical evidence provided in this subtext. The proportion of the author's metaphors is also comparatively large in the hypothetic subtext in which they are used as a powerful tool to introduce the new knowledge, and in the deducing subtext. It is to be stressed, however, that in general conventional metaphors prevail over the author's metaphors in all of the subtexts. This may be explained by the subject of the text – the sounds of language. The objective and the "ideal" system of sounds were already arrived at and described by phoneticians for most European and Non-European languages. Focusing on the naïve feeling of the sound-system of a language as the new knowledge, E. Sapir, nevertheless, is constantly making references to the old knowledge represented in detailed surveys of phonetics and empirical evidence of phonetic analyses.

4.2 Metaphorical models

In the last part of the data analysis we construct metaphorical models of the concept *Sound* represented in the scientific subtexts based on G. Steen's theory (Steen 2002). The obtained models are shown in Table 2 below.

Table 2. Metaphorical Models of Concept Sound

Subtext	Metaphoric Model
Problem formulating	1.Sounds – Framework
	2.Sounds – Outer
	3.Sounds – Building elements
	4.Sounds – Mystery
Hypothetic	1.Sounds – Mechanics
	2. Sounds – Muscular adjustments
	3. Sounds – Variety
	4. Sounds – Product
Substantiating	1.Sounds Work
	2.Sounds are Live
	3.Sounds – Stock
	4.Sounds – Elements
	5.Sounds – Product
	6.Sounds have Nature
	7.Sounds have Value
	8.Sounds – Carriers
	9.Sounds – Stream
	10.Sounds – Music
	11.Sounds – Singing
Deducing	1.Sounds are Heard
	2.Sounds are Analyzed
	3.Sounds – Pattern

Table 2 shows that metaphorical models in different subtexts of the scientific text are conditioned by the type of knowledge and the author's concept contained in these subtexts. Excerpts (23), (24), (25), (26), (27) and (28) below include examples of metaphors used in the problem stating subtext:

(23) … the mere *phonetic framework* of speech;
(24) … does not constitute *the inner fact of language* and that the single sound of articulated speech is not, as such, *a linguistic element* at all;
(25) …his *language is built up*, acoustically speaking, of a comparatively small number of distinct sounds.
(26) a *mysterious "accent";*
(27) certain *unanalyzed phonetic character*;
(28) *air of strangeness*.

These metaphorical expressions convey the idea that single sounds, on the one hand, are on the outside of language but, on the other hand, all aspect and facts of language are embodied in sounds. Another problem is that the naïve feeling of the sounds of language is more often wrong as the naïve speaker is not conscious of actually used sounds and nuances of sounds. In the hypothetic subtext, E. Sapir insists that the total number of possible sounds is greatly in excess of those actually in use. One of the brightest metaphors contributing in fleshing out this hypothesis is the following:

(29) *endless gamut*.

The scholar develops this idea in the deducing subtext making an abundant use of "musical metaphors" as shown below:

(30) outline *a tune* on a series of *b*'s and *d*'s;

(31) talk with a nasal *twang*;

(32) in the manner of *the plucked "pizzicato" on stringed instruments*;

(33) gives the effect of *humming*;

(34) labial *trill*;

Thus, the analysis of the article shows that Sapir's conception is built on various metaphorical models, developing the concept Sound in the light of existing and personal knowledge. Throughout all stages of the cognitive and communicative situation represented in the subtexts two trends are traced: use of logic-oriented, mechanism-built models (Building Elements, Mechanics, Product, Work, Stock, Value, Pattern etc.) and creative, nature-oriented models (Mystery, Nature, Stream, Music, Singing).

5. Discussion and Conclusion

This study aimed at identifying the metaphorical models represented in the scientific article on Linguistics «The Sounds of Language» by E. Sapir. The analysis revealed that E.Sapir uses two types of metaphorical models: mechanical and nature-oriented. The identified metaphorical models refer to two core metaphorical models in Linguistics: Human and Results of Labour and Human and Nature, the two realias typical of the beginning of the XXth century as two attitudes to life after the Industrial Revolution. The mechanical model dominates, probably, due to the fact that E.Sapir carried out researches within American descriptivism and dealt with the key linguistic concepts – among which is Sound – which are profoundly studied. This fact is also supported by the borrowed metaphors which are about 75 % of all metaphors used in the article. The researcher uses the largest number of original, author's, metaphors in the substantiating text in which a new knowledge is produced. We assume that the issue of freedom of the XXth century researcher's views expression, traced in the scientific text due to metaphors, is a matter of further discussion.

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