LEXICAL MOTIVATION AND ACCESSIBILITY OF TEXT FOR THE READERSHIP: COMPARATIVE ANALYSIS OF POPULAR SCIENCE LITERATURE IN RUSSIAN AND INDONESIAN LANGUAGES

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ABSTRAK

Makalah ini mengkaji pengaruh motivasi leksikal terhadap pembaca melalui analisis komparatif fungsi teks sains populer dalam bahasa Rusia dan Indonesia. Fungsi motivasi leksikal dalam teks berkontribusi pada persepsi yang lebih baik dan peningkatan minat pembaca. Analisis teks dalam kedua bahasa memungkinkan kita untuk mengidentifikasi strategi leksikal utama dan mengevaluasi efektivitasnya dalam meningkatkan aksesibilitas dan daya tarik pengetahuan ilmiah. Hasil penelitian menunjukkan persamaan dan perbedaan dalam fungsi motivasi leksikal dalam teks dalam bahasa Rusia dan Indonesia dan pengaruhnya terhadap persepsi pembaca terhadap teks. Berdasarkan analisis, rekomendasi diberikan untuk mengoptimalkan penyertaan motivasi leksikal dalam teks sains populer untuk memperluas komunikasi ilmiah dan meningkatkan minat audiens.

Kata Kunci: Bahasa Rusia, Bahasa Indonesia, Teks Sains Populer, Kosakata, Motivasi Leksikal, Penelitian Komparatif, Komunikasi Ilmiah, Minat Pembaca.

ABSTRACT

This paper examines the influence of lexical motivation on the readership through a comparative analysis of the functioning of popular science texts in Russian and Indonesian. The functions of lexical motivation in the text contribute to its better perception and increased interest of readers. Analysis of texts in both languages allows us to identify key lexical strategies and evaluate their effectiveness in increasing the accessibility and attractiveness of scientific knowledge. The results of the study show similarities and differences in the functioning of lexical motivation in texts in Russian and Indonesian languages and its influence on readers' perception of the text. Based on the analysis, recommendations are given for optimizing the inclusion of lexical motivation in popular science text to expand scientific communication and increase audience interest.

Keywords: Russian Language, Indonesian Language, Popular Science Text, Vocabulary, Lexical Motivation, Comparative Research, Scientific Communication, Reader Interest.

A. INTRODUCTION

Popular science texts play an important role in the dissemination of knowledge and the formation of a scientific worldview among a wide audience. M.N. Kozhina identifies three main substyles within the scientific style: scientific style, scientific-educational style and popular science style [Kozhina, M.N., Stylistics of the Russian language. 3rd ed. M., 1993. 153 S.]. Popular science text is a unique category of written and oral communication that seeks to make complex scientific concepts accessible and understandable to a wide audience [Stylistic encyclopedic dictionary of the Russian language / ed. M.N. Kozhina. 2nd ed., stereotype. M.: Flint; Science, 2011. 236 c]. Most scientists who study text problems divide texts into popular science and fiction depending on the context of communication and how they reflect reality (Valgina N.S., Text Theory, 2003). Their classification of styles is based on extralinguistic factors, such as the goals and objectives of communication, the nature of the interaction between the author and the reader, and the content of messages. According to Krupnov (2015): popular science text is a genre that combines scientific facts and accessible language, aimed at expanding the scientific worldview and involving a wide audience in scientific discussions. Some linguists (N. N. Mayevsky, N. Ya. Serdobintsev, E. A. Lazarevich) consider popular science discourse as a separate functional style.

Thus, popular science texts represent a unique category of communication that combines scientific facts with accessible language, making complex concepts understandable to a wide audience. This contributes not only to the popularization of science, but also to increasing the scientific literacy of society, not only promoting awareness, but also intensifying interest in science, developing among citizens a deeper understanding of modern scientific achievements and their significance for society. This contributes not only to the popularization of science, but also to increasing the scientific literacy of society, not only promoting awareness, but also intensifying interest in science, developing among citizens a deeper understanding of modern scientific achievements and their significance for society.

Important aspects influencing the perception of scientific popular texts are lexical motivation — the connection between the meaning of a word and its form, which allows us to understand the meaning at a deeper level [Kasatkina, N.V. 2010. Lexical motivation: theoretical and practical aspects. M.: Publishing House of the Russian State University for the

Humanities, P. 45]. With the help of vocabulary motivation, vocabulary and semantics help clarify and illustrate scientific concepts.

B. RESEARCH METHODS

This study uses a **comparative cross-linguistic analysis**, focusing on the differences and similarities in lexical motivation and text accessibility between Russian and Indonesian popular science literature. The methodology uses qualitative approaches:

Qualitative Analysis:

Text Selection:

- A corpus of popular science literature will be selected from both languages. Texts will include books, articles, and essays that aim to inform and educate a general audience.
- For Russian, popular science publications like "Мир Животных" (Animals World)" by Igor Akimushkin and "Жизнь Замечательных Животных" The Life of Wonderful Animals" by Alfred Brem will be considered.
- For Indonesian, popular science publications like "Dari Kutu Sampai ke Gajah" (From Fleas to Elephants) by Soeseno Slamet and "Buku Pintar Binatang" (Smart Book on Animals) will be considered.

Lexical Motivation Analysis:

- Lexical motivation will be explored through an analysis of word formation, etymology, connotations, and metaphoric usage in both Russian and Indonesian texts.
- Focus will be on how lexical items are chosen to make complex scientific ideas more accessible and relatable to the general reader.
- Discourse analysis techniques will be employed to examine how authors simplify or adapt scientific concepts through lexical choices.

C. RESULTS AND DISCUSSION

The concept of "lexical motivation" is a reflection of the internal connection between the form of a word and its meaning, which promotes understanding and memorization (Leontyev, A. A. 1981. Problems of motivation in language and speech. M.: Nauka, P. 98). In her doctoral dissertation "Problems of dialect lexicology" (1974), O.I. Blinova laid the theoretical foundations of motivation, including its lexical status and key concepts such as motivation,

motivational connections and internal word form. Her work, based on the principles of systematicity, synchronicity and anthropocentrism, emphasizes the importance of considering how native speakers understand the motivation of a word, reflecting the inherent anthropocentric nature of the concept (Blinova, 2006, pp. 23-24).

According to O. I. Blinova (2002), there are several types of lexical motivation:

1. *Phonetic motivation*

This type of motivation is based on the sound design of the word. The sound form of a word can be associated with its meaning, causing associations. For example, the word "*жук*" (read: zhuk), which means bug in Russian language resembles the sound it represents. The sound form of the word "zzhh" resembles the sound that bugs make, creating an association with this animal. Another example, in Indonesian the word "cicak" (domestic lizard) resembles the sound "cakk cakk" of the lizard it refers to.

2. *Morphological motivation*

Morphological motivation is associated with the internal structure of the word. The components of a word (roots, prefixes, suffixes) can help in understanding its meaning. For example, in the word "*белка*" (read: belka), which means squirrel in Russian, the root is "белый" (beliy) with the suffix "-ка". The suffix "-ка " is added to the root ""белый" (white), forming a diminutive noun indicating a small creature with white colour, creating a new meaning (squirrel). Another example: in Indonesian, the word "ular sendok" (spoon snake) comes from the root "ular" (snake) and the suffix "sendok" (spoon). Here "sendok" (spoon) specifies the type of snake, forming a new thought (cobra).

3. *Semantic motivation*

This kind of motivation concerns the relationship between the meanings of words and their context. This may include metaphors, similes and associations that make the meaning of the word clearer. For example, the word "rooster". Originally denotes a male poultry, but figuratively can be used to denote a person who gets up early or starts the day actively. The Indonesian language also has the word "buaya" (crocodile). Originally it is a giant reptile or amphibia which has been living since Jurassic era. In a figurative sense, this word can be used to mean a man or a person who likes flirting with many women or seems nice in the outside

but can hurt people once they don't notice. For example, "lelaki buaya" (crocodile man) can refer to a man who seems kind and calm but is actually dangerous and mean (like a crocodile).

The variety of definitions and types of lexical motivation emphasizes its versatility and importance in various areas of linguistics, such as semantics, phonetics, morphology, etc. It helps explain how linguistic elements interact to form a holistic understanding of a text. Thus, lexical motivation not only enriches the language system, but also contributes to more effective communication, improving understanding and perception of information.

Lexical motivation covers the use of language to explain and clarify concepts, create figurative representations, and simplify complex ideas. These mechanisms help ensure that scientific information is perceived as more accessible and understandable, which is the central goal of popular science texts, which is called text accessibility. Text accessibility is the ability of a text to be understandable and perceived by the reader, which depends on its structure, language and content (Shevchenko, V. A. 2005. Text as an object of linguistic analysis. M.: RSUH Publishing House, p. 67). There are several factors which influence text accessibility. According to Solovyov (2010), the accessibility of the text is determined by its clarity, logic and relevance, which allows the reader to easily perceive information (Soloviev, A. P. 2010. Text theory: basic concepts and approaches. St. Petersburg: St. Petersburg State University Publishing House. P. 112). Logical text structure, clear headings and sections help readers quickly find the information they need and better assimilate the material.

Lexical motivation and accessibility of the text are key elements of a successful popular science text. They not only contribute to a better understanding and perception of scientific ideas, but also help to establish contact with the readership. Effective use of these aspects allows popular science texts to fulfil their main task - to popularize science and expand the scientific worldview of society.

Comparative analysis: lexical motivation and text accessibility on scientific popular texts in Russian and Indonesian languages

Comparative motivation is built on the methodological and ontological foundation of descriptive motivation, which has developed and expanded to meet the need to study both common and unique aspects of verbal motivation in different languages or in different forms of the same language. In the article by O.I. Blinova "Comparative motivation: results and perspectives" (2006) [Blinova, 2006, p. 65-68], as well as in the chapter of her monograph

[Blinova, 2007, p. 394] outlines the contribution of comparative motivation to comparative research of languages. These contributions include the expansion of units of comparative analysis (such as words in terms of their motivation, motivational paradigms, etc.), the development and application of methods of motivational-comparative analysis, and motivationally related words in various texts, the expansion of metatexts for motivational research, the creation scientific concepts for motivational and comparative dictionaries of various kinds [Blinova, 2006, p. 66-67]. Comparative motivational research reveals unique aspects of how words are motivated in several languages, including the ways in which native speakers interpret reality, the range of lexical items involved in motivational relationships, and the types and processes of verbal motivation [Blinova, 2007, p. 17 – 18]). At the same time, it explores linguistic universals - general characteristics of the motivation of words in different languages [Ullman, 1970, p. 251 – 259], which highlight common features of how human languages process verbal motivation.

Let us give examples of types of lexical motivation and text accessibility in a popular science text in Russian:

"**Жук**" (read: zhuk) or beetle in English, in the text:

"Жуки, словно маленькие рабочие, передвигаются с одного цветка на другой, их крылья издают мелодичное **жужжание**. Этот **жужжащий звук** не только приятно слышать, но и напоминает нам о важной роли **жуков** в экосистеме. Они помогают опылению растений, что является важным процессом для наших растений" [Акимушкин, Игорь, Мир животных, Том 5, С. 50].

Translation: "The beetles, like little workers, move from one flower to another, their wings emitting a melodious buzz. This buzzing sound is not only pleasant to hear, but also reminds us of the important role of beetles in the ecosystem. They help pollinate plants, which is an important process for our plants" [Akimushkin, Igor, Animal World, Volume 5, P. 50].

Lexical motivation (LM): **жуки** (zhuki)**– жужжание** (zhuzhuzhanie) **- жужжащий звук (zhuzzhasyiy zvuk) – жуков (zhukov)**

Translation: beetles – buzzing – buzzing sound – beetles

Type LM: phonetic (жук (zhuk) resembles the sound it represents).

In Indonesian text:

"**Jangkrik**" (cricket) in the text:

"**Jangkrik** dapat kamu temui di kebun belakang. Ia dapat terbang dan **mengerik**. Suaranya khas, **kriiikkkk.. kriiikkk, kriiikkkk**… Hanya **jangkrik** jantan yang mengerik untuk menarik perhatian lawan jenis dengan cara menggosok-gosokkan kedua sayapnya" [Buku Pintar Dunia Satwa, Hanifah, Nuha Abu dan Kak Yogi, hal. 75]

LM : **jangkrik – mengerik – (suara) krik krik krik**

Translation: "You can find crickets in the back garden. It can fly and chirp. "The sound is distinctive, kriiikkkk.. kriiikkk, kriiikkkk... Only male crickets chirp to attract the attention of the opposite sex by rubbing their wings together" [Smart Book on the World of Animals, Hanifah, Nuha Abu and Kak Yogi, p. 75]

LM: crickets – chirps – (sound) krick krick krick

Other types of lexical motivation in Russian and Indonesian language:

«**Rooster**» in the text:

"Примерно такие слова вы должны произносить про себя как заклинание. Самовнушение всегда очень эффективно. Можно прибегнуть к лекарствам, снимающим страх: от четырех таблеток (или 20 капель) валерьянки до чуть более сильных препаратов. Но по поводу лекарств лучше посоветоваться с врачом, ибо отдельные препараты могут снизить ваше сексуальное чувство. — Почему *петух поет* всю жизнь? — Потому, что у него много жен и ни одной тещи. (Из заключения зоопсихолога) № 338. Что делать, если женщина боится быть с мужчиной, боится по-своему оказаться несостоятельной? [Владимир Шахиджанян. 1001 вопрос про ЭТО (№№ 1-500) (1999)].

Translation: "You should pronounce these words to yourself like a spell. Self-hypnosis is always very effective. You can resort to medications that relieve fear: from four tablets (or 20 drops) of valerian to slightly stronger drugs. But it is better to consult a doctor about medications, because some medications can reduce your sexual feelings. — Why does **a rooster sing** all his life? - Because he has many wives and not a single mother-in-law". (From the conclusion of a zoopsychologist) No. 338. What to do if a woman is afraid to be with a man, afraid to be insolvent in her own way? [Vladimir Shakhidzhanyan. 1001 questions about THIS (No. 1-500) (1999)].

LM: **петух – поет** (read: petukh – poyot). Translation: rooster – sings

Type of LM : morphological motivation : поет → петь → петух (read: poyot – pet – petukh). Translation: sings – to sing – rooster

«**Ular derik**» in the text: "**Ular derik** merupakan kelompok ular mura berbisa. Ciri khas ular ini adalah ekornya yang bersegmen yang bisa **berderik** (menimbulkan suara yang keras bila digetarkan)" (Tim Pengetahuan Alam, Seri Pengetahuan Alam: Reptil. 2007. Hal. 40).

Translation: "Rattlesnakes are a group of venomous vipers. The distinctive feature of this snake is its segmented tail that can rattle (produces a loud sound when vibrated)" [Natural Science Team, Natural Science Series: Reptiles. 2007. p. 40].

"Sesuai dengan namanya, ular derik **berderik** untuk memperingatkan musuhnya agar tidak mengganggunya" [Tim Pengetahuan Alam, Seri Pengetahuan Alam: Reptil. 2007. Hal. 40].

Translation: As the name suggests, rattlesnakes rattle to warn their enemies not to disturb them" [Natural Science Team, Natural Science Series: Reptiles. 2007. p. 40].

LM : **ular derik – berderik**

Translation : rattlesnake – to rattle

Type of LM : **morphological** : rattlesnake – snake - to rattle

Interestingly, both Russian and Indonesian languages have similarities in semantic motivation, such as follows:

«**Сирена**» (read: sirena) in Russian text:

" Морские обольстительницы. Скорее обратно! Можно понять чувства людей того времени, когда верили самым вздорным вымыслам, когда еще очень многое в природе было скрыто за семью печатями. Что же касается конкретно легенды о *сиренах*, то за ними стоят вполне реальные морские животные — дюгони и ламантины (в науке они и в самом деле отнесены к группе *сирен*). И действительно, на значительном расстоянии эти животные напоминают полурыб-полуженщин. Если к тому же мы вспомним, как часто «результат зависит от точки зрения», то стоит ли недоумевать, почему наши предки были убеждены в существовании коварных морских сирен. Внешне дюгони и ламантины похожи на крупных дельфинов, но во многом отличаются от них. [В. А. Мезенцев. Чудеса: Популярная энциклопедия. Том 1. Книга 2 (1991)].

Translation: Sea seductresses. Hurry back! One can understand the feelings of people of that time when they believed the most absurd fictions, when so much in nature was still hidden

behind seven seals. As for the legend about sirens specifically, behind them there are very real sea animals - dugongs and manatees (in science they are actually classified as a group of sirens). And indeed, at a considerable distance these animals resemble half-fish, half-women. If we also remember how often "the result depends on the point of view," then is it worth wondering why our ancestors were convinced of the existence of insidious sea sirens. Outwardly, dugongs and manatees are similar to large dolphins, but differ from them in many ways. [V. A. Mezentsev. Miracles: A Popular Encyclopedia. Volume 1. Book 2 (1991)].

LM: **сиренах – сирен** (sirenakh – siren)

Type of LM : **semantic** (marine mammals that love to spend time by the sea or a mythical sea creature in the legends and myths of the peoples of Europe, a maiden with a fish tail instead of legs, living in the sea)

«**Duyung**» in Indonesian text: "Juru dongeng terkenal Hans Christian Andersen itupun ikut menganyam dongeng yang menawan tentang seorang **puteri duyung** kecil yang ingin sekali menjadi manusia, dengan kaki yang berperikemanusiaan, sampai mengharukan sekali" (Soeseno, 1984, Dari Kutu Sampai Ke Gajah, hal. 194).

Translation : "The famous storyteller Hans Christian Andersen also weaved a charming fairy tale about a little mermaid who longed to be human, with humane feet, which was very touching" (Soeseno, 1984, From Fleas to Elephants, p. 194).

"Di tengah lautan yang luas, terdapat makhluk legenda yang selalu menarik perhatian banyak orang: **duyung**. **Duyung**, atau yang sering disebut sebagai "manatee atau dugong," adalah mamalia laut yang lembut dan ramah. Dengan tubuhnya yang besar dan bentuk yang menggemaskan, **duyung** seringkali terlihat merumput di padang lamun yang subur" (Soeseno, 1984, Dari Kutu Sampai Ke Gajah, hal. 195).

Translation: "In the middle of the vast ocean, there are legendary creatures that always attract the attention of many people: mermaids. Dugongs, often referred to as "manatees or dugongs," are gentle and friendly marine mammals. With their large bodies and adorable shapes, dugongs are often seen grazing in fertile seagrass beds" (Soeseno, 1984, From Fleas to Elephants, p. 195).

LM: duyung – putri duyung

Type of LM: semantic (a little mermaid who longs to be human; marine mammal often called manatees or dugong).

D.   CONCLUSION

In conclusion of our analysis on the topic "Lexical motivation and accessibility of text for the readership: a comparative analysis of popular science literature in Russian and Indonesian," several key points should be noted:

First, lexical motivation plays an important role in creating accessible and understandable text. It makes it easier for the reader to perceive information because the words and expressions used in popular science literature reflect real-life concepts and images. It is important to consider that different languages have their own characteristics in the use of lexical motivation, which can affect the perception of the text.

Secondly, the accessibility of the text is directly related to its structure and linguistic means. Popular science texts in Russian and Indonesian demonstrate different approaches to simplifying complex scientific concepts. Russian literature often places an emphasis on accuracy and depth of presentation, while Indonesian literature may focus on more visual and figurative ways of conveying information.

Thus, our analysis showed that lexical motivation and text accessibility are important factors influencing readership. Understanding these aspects helps authors of popular science texts create materials that will be interesting and understandable to a wide audience, helping to expand the scientific worldview and involve people in the discussion of current scientific topics.

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