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Study of Phraseological Units with Color Components in The Integration of Linguistics and Other Sciences

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Abstract: This study explores phraseological units containing color components through the lens of linguistics, psychology, cognitive science, and cultural studies. The research draws on comparative analysis of color terms and their symbolic functions across English, Russian, and Karakalpak languages. A historical and theoretical overview of color semantics is provided, incorporating insights from evolutionary linguistics, psycholinguistics, and linguistic relativity. Seminal works by Sapir, Whorf, Berlin, Kay, Goethe, Wierzbicka, and Frumkina are reviewed to examine the physiological, semantic, and cultural aspects of color perception. The hypothesis is that extralinguistic factors cause differences in how various cultures conceptualize and linguistically encode color. Structural and semantic changes in phraseological units are explored in connection with their cultural significance. Findings highlight the universality of basic color perception and the deep cultural divergence in meaning, with a focus on phraseological expression, symbolic richness, and cognitive structuring of color semantics. The research contributes to the understanding of color as a complex semiotic and cultural phenomenon embedded in language.

Keywords: Color semantics, phraseological units, cultural symbolism, cognitive linguistics, linguistic relativity, Karakalpak language, psycholinguistics.

Introduction: The symbolic and semantic study of color has become central to various disciplines, including linguistics, psychology, biology, and cultural studies. Color functions as a significant cultural code and linguistic symbol. This paper reviews scholarly perspectives on color terms across different languages and their symbolic roles in phraseology.

Over the past decade, the issue of studying color-denoting units has been at the center of attention of scientists in various fields of knowledge, including evolutionary (N.B. Bakhilina 1975; T.V. Vendina 1999; W.J. Jones 2013), psychological (R.M. Frumkina 1984; A.P. Vasilevich 2013; V. Rakhilina 2000), and linguocultural aspects of colorative units (S.G. Ter-Minasova 2000). Such studies are related to traditional phraseology and paremiology (N.F. Alefirenko, E.F. Arsentyeva, R.A. Ayupova, T.G. Bochina, D.N. Davletbaeva, D.O. Dobrovolsky, A.V. Kunin, V.M. Mokienko, G.L. Permyakov, Z.K. Tarlanov, V.N. Fattakhova, T.N. Fedulenkova, V.K. Kharchenko), linguoculturology (R.R. Zamaletdinov, V.I. Karasik, M.L. Kovshova), and psycholinguistics (R.M. Frumkina, N.V. Ufimtseva).

METHODS

The study employs a comparative, analytical, and descriptive method by: Reviewing theoretical frameworks and historical research, analyzing phraseological units containing color components in English and Karakalpak languages, identifying semantic and cultural functions of color terms, examining structural changes in phraseology through discursive and contextual usage.

RESULTS

Color is a broad cultural code that helps to overcome "cultural color blindness" in the interactions between different peoples (Belov A.I. 1988). For many centuries, scientists have attempted to delve into the physiological nature of color, understand its effect on people, and learn to symbolize it. The role of color in all linguistic manifestations varies among different

peoples, ethnic groups, and even among individuals.

The symbolic meanings of color terms reflect the appearance of each existing language (color) phenomenon. The importance and complexity of studying color phenomena in language is determined by the symbolic richness of color semantics and its "uneven" reflection in different languages. Coloratives function as "semiotic condensers" that perform the role of cultural memory mechanisms (Gataulina L.R. 2005). The national and cultural peculiarities of color symbols are especially evident in phraseological units, traditions, legends, and religious customs.

For many centuries, scientists have attempted to delve into the physical nature of color, determine its influence on human consciousness, and study its properties. Color perception has attracted the attention of researchers in various fields of science, and color concepts have become the object of study for many fundamental sciences: biology, physics, psychology, philology, linguoculturology, and others.

Color is considered the most essential category of knowledge about the world. Naturally, every language has a set of adjectives, among which are words denoting color meanings. In the mid-19th century, scientists became interested in the problem of linguistic perception of color. To test the linguistic relativity hypothesis, E. Sapir and B. Whorf chose the color space, as it is convenient for study due to the possibility of unambiguously determining any color through objective physical measurements (in terms of hue, brightness, and saturation). In the 1920s and 1930s, the concept of a close relationship between language structure, qualities of thinking, and ways of understanding the external world was developed. According to the American philologist E. Sapir, ..."contrary to what people believe, they do not live solely in an objective world of activity; they are greatly influenced by the language that serves as a means of communication for their society. It is erroneous to think that we can fully comprehend reality without resorting to language, or that language is merely a secondary tool for solving specific problems of thought. In fact, the 'real world' is unconsciously built upon the linguistic norms of a particular group." B. Whorf (Whorf B. 1960) puts forward the doctrine of linguistic determinism (a unidirectional causal relationship between language and cognitive processes): ..."the basis of any language's linguistic system (in other words, its grammar) is not a simple tool of perception. On the contrary, grammar itself shapes thinking and serves as a program for human intellectual activity." According to these scholars, thinking and understanding do not depend on which language a person speaks.

In the fundamental work of B. Berlin and P. Kay "Basic Color Terms: Their Universality and Evolution," an attempt was made to create a classification of the color vocabulary. The English scholars analyzed linguistic processes in 98 languages belonging to different language families. To determine the basic color terms, they used the following main criteria:

1) color terms should be monolexemic, that is, their meaning should not be derived from the meanings of their parts;

2) the meaning of one color term should not be included in the meaning of another;

3) the use of color terms should not be limited to a certain class of objects;

4) the color designation should be present in the dictionary.

The following conclusions were drawn during the analysis. Firstly, there is a basic universal range consisting of eleven primary color categories. They are used in all forms of language. The main color categories include: white, black, red, green, yellow, blue, brown, orange, gray.

Secondly, if a language has fewer than eleven basic color categories, there are certain constraints on which categories can be included. Berlin and Kay note:

1) all languages have terms for white and black;

2) if a language has three terms, then it will have a term for red;

3) if a language has four terms, then it will have a term for either green or yellow;

4) if a language has five terms, then it will have terms for both green and yellow;

5) if a language has six terms, then it will have a term for blue;

6) if there are seven terms in the language, the word qoñır is included;

7) if there are eight or more color terms in a language, then there are terms for violet, orange, and gray (Berlin B., Kay P. 1968).

Berlin and Kay note that the main criteria for describing color units for Indo-European languages are hue, brightness, and saturation. The positions of B. Berlin and P. Kay were, on the one hand, perceived as meaningless, their theses found followers, and on the other hand, some scientists perceived them negatively.

I.V. Goethe's "Theory of Color" is one of the most noteworthy works dedicated to color issues. In it, the author divides the colors into "positive" - yellow, red-yellow (dark yellow), yellow-red and "negative" - blue, red-blue and blue-red. I.V. Goethe considered green a

neutral color. The first group of colors, in the author's opinion, evokes a cheerful, lively mood, while the second group conveys a distracted, soft, and sad mood (Bazima B.A. 2005).

In Russian linguistics, there are numerous approaches to studying color-related lexical units. Many notable works have been dedicated to the comparative analysis of phraseological and paremiological units containing color components across different languages (Yu.V. Zolnikova 2010; J. Suchova 2015; Ya.A. Biyik 2016). R.R. Zakirov examined the formation mechanisms of phraseological units in English, Russian, and Tatar languages (Zakirov R.R. 2003), while L.R. Gataullina investigated color culture using materials from English, German, French, Russian, and Tatar languages (Gataulina L.R. 2005).

In her fundamental work "Language. Culture. Mind," Polish linguist A. Wierzbicka attempts to find natural prototypes from the surrounding environment for primary colors (Wierzbicka A. 1996). A. Wierzbicka notes that a prototype is suitable for representing characteristics and features inherent to a certain category. With this approach, the red color unit is a prototype, and its variations like pink and burgundy belong to its categories (Zavialova E.E. 201). The Polish linguist determined the relationship between black and night, white and day. Prototype referents were selected for green and blue colors, which are plants and sky respectively. An example confirming this idea can be cited from the Karakalpak language: in the phrase "aspan kok" (sky blue), "aspan" (sky) is the prototype of the blue color; in the phrase "sary quyash" (yellow sun), "quyash" (sun) is not associated with yellow color without reason. The soil or earth itself is considered brown. Choosing a prototype referent for red is a difficult task because there is no stable prototype for this color in the environment. Some associate it with blood, but we are not confronted with this presumed analog every day; the sky, plants, and sun are more present in our reality.

The etymology of the word "Adam" can be traced back to religious perspectives. For example, in all religious manifestations of Christianity, the concept of "Man" is represented by units such as "First Man," "Adam," and "Eve," while in all religious manifestations of Islam, the concept of "Adam" is also represented by these same elements. Additionally, in Islam, it has verbalizers such as "First Prophet," "a drop of water," "flesh," "servant," "dust," "red earth," and "soul."

K.G.K.Kdirbaeva (Kurbanbaeva G.G. 2023) proposes that the origin of the word "Adam" is connected to the ancient Hebrew language, where it conveyed the meanings of "human," "earth," and "red." This view corroborates the statements of A. Wierzbicka.

After thoroughly analyzing color terms in various languages, A. Wierzbicka concluded in her work "Color Designations and Universals of Visual Perception": ..."color concepts are associated with certain 'universal elements of human experience,' and these universal elements can be approximately defined as: day-night, sun, fire, vegetation, sky, and earth." Anna Wierzbicka (Wierzbicka A. 1996) raises the main issue in the fields of linguistics and cognitive linguistics, which is the difference between the physiological perception of color and its conceptualization in language and culture. She employs methods based on describing the semantics of color terms, as Wierzbicka notes, analyzing how color terms are represented in different languages, what semantic components they contain, and how their meanings are formed. She proposes a semantic analysis of color terms based on universal primitives (NSM - Natural Semantic Metalanguage). This confirms that even basic colors can contain cultural and symbolic meanings. At the same time, Wierzbicka, based on research on the neurophysiology of color perception, shows that color has a biological basis - the retina of the eye receives light of a certain wavelength, and the brain processes this information and generates color images. This is a universal physiological process common to all. Despite the universality of physiological perception, Wierzbicka notes that the semantics and cultural understanding of color differ significantly across languages. For example: in Russian, синий and голубой are different colors, but in English they are combined into one color (blue). In some African languages, there are no separate terms for green and blue, while in Chinese, white can signify morning, and in Western culture, it can represent purity.

Thus, colors are perceived by all people in approximately the same way from a physiological point of view, but their linguistic and cultural analysis can differ significantly. This confirms that the conceptualization of color is not a mere reflection of simple physiological processes, but the result of a complex interaction between language, culture, and thinking.

An important role in the study of color terms is played by P.M. Frumkina's (Frumkina R.M. 1984) monograph "Color, Meaning, Similarity," in which the main task is "to study the semantic relations in the group of words and phrases intended for the expression of color," that is, color terms are studied from a cognitive aspect. She experimentally studies the features and denotative meanings of words, thereby providing the structure of the color names block. The author concludes that the main color group is conditional and refutes the statement that "in language A there are five main color

terms, in language B there are ten colors." It is suggested that native speakers perceive color terms as a whole, integrated entity that cannot be divided into structural parts.

In the work of R.M. Frumkina, the necessity of the cognitive approach in studying color terms is emphasized. R.M. Frumkina examines the systematic relationships between color terms in language, determining their semantic features, similarities, and connections. For example, she considers the relationship between primary and derived color terms (red - reddish, burgundy) and what metaphorical and associative meanings different colors have (black humor, white-hearted). The cognitive aspect of studying coloratives, according to R.M. Frumkina, involves considering color terms not only as names of types but as elements of the entire conceptual picture. This implies that colors have culturally and cognitively significant meanings that reflect ways of perceiving and classifying the world. For instance, in the Karakalpak language, green might be associated with youth, while white could be linked to purity and kindness. R.M. Frumkina conducts experimental studies of connotative and denotative meanings. Thus, denotative meaning refers to certain words being assigned as signs to specific colors (blue and its varieties). Connotative meaning reveals the additional meanings that color terms acquire in speech (for example, "blue" can indicate not only the color but also a state of intoxication). The structure of the color block suggests models for organizing color names in language, showing how they are grouped, hierarchized, and interact with each other. This helps determine which colors are primary, which are peripheral, and how they are related in semantic space. R.M. Frumkina's work is very significant because color in language is not only a physiological phenomenon but also a complex system of meanings and categories shaped by cognitive and cultural factors. She asserts that it is impossible to study color terms without taking into account their semantic, psychological, and cognitive qualities.

A valuable source for studying the development of color symbolism is B.A. Bazym's work "Psychology of Color: Theory and Practice." It discusses the analysis and development of color semantics in the Middle Ages and the Renaissance, as well as in philosophical teachings of the 17th-19th centuries and the provision of color symbolic forms and content in the 20th century. The author identifies three stages of color symbolic development:

1) cosmological (mythological) - this stage encompasses the color symbols of "primitive peoples, the ancient world, and ancient times";

2) religious (theological), which covers the period from ancient times to the pre-Renaissance era;

3) socio-psychological (Renaissance period). Color is considered as a socio-political, social, and individual psychological process and phenomenon (Bazima B.A. 2005).

B.A. Bazima concludes that color is not a blank page on which a person can write anything they want. Color evokes specific reactions and changes in a person's psychological world; analysis of these leads to color associations and characteristics. According to B.A. Bazima, color perception is described as either neutral or with its own dominant element. It carries deep psychological and symbolic meaning, influencing human thoughts, feelings, associations, and behaviors. We oppose the "blank page" concept mentioned in the quote, as B.A. Bazima rejects the idea of color as a neutral carrier of meaning that can be freely interpreted. This contradicts radical relativism, which holds that the meaning of color depends solely on cultural traditions and individual experience. Instead, he points out that color inherently elicits certain reactions. Colors trigger automatic sensory and cognitive responses in people. For example, red can be associated with energy, danger, or aggression; blue is associated with calmness, confidence, and stability, while yellow is associated with joy and optimism.

These reactions are influenced by biological and cultural factors. B.A. Bazima emphasizes that color perception is not independent but connected to the properties of the human psyche. Color not only elicits physiological and sensory reactions but also serves as a foundation for the formation of symbols. In Western culture, white symbolizes purity and innocence, while in some Asian traditions, it signifies mourning. Black may be associated with elegance (black suit) or death and mourning. Green is often linked to nature, life, and rebirth. Thus, color symbolism is a combination of innate reactions and cultural meanings. B.A. Bazima notes the close relationship between color, psychology, and symbolism. Colors cannot be interpreted entirely independently, as they trigger certain psychological reactions. Color perception is formed at the intersection of biological mechanisms and cultural traditions, creating stable associations and figurative meanings across different languages and societies.

The research of A.P. Vasilevich (Vasilevich A.P. 2003) plays a significant role in studying color terms from an etymological perspective. His work "Etymology of Color Names as a Mirror of National-Cultural Consciousness" is dedicated to the history of words denoting colors, the process of their emergence, and the substitution of some words with others. The word "qizil" (red) has a

common Indo-European root preserved in many languages (compare the English word "red" and the German word "rot"). The word "qizil" initially meant "beautiful," but by the end of the 18th century, it acquired its current meaning. The author thoroughly analyzed the color terms for brown, dark yellow, motley, and blue/sky blue.

In a study conducted by N.V. Serov (Serov N.V. 1995), titled "Symbolism of Color/Color Symbols," color semantics is presented from the perspective of an archetypal model accumulated over millennia. Based on the chromatic relationships in phraseological units, the author provides the following definition of color: "ideal (intellectual) connected through material (physical/physiological) sensations as their information-energy relations."

Until today, the study of coloronyms in Turkology has been limited to separate studies and explanations. The topic of color is not as widely covered in Turkic philology as it is in foreign and Russian languages. In scientific research, there are works devoted to the description of color terms in Turkic languages in onomastics, comparative analysis of coloronyms, or analysis of their usage in fiction.

The initial hypothesis of the study is that due to extralinguistic factors, certain color types are perceived differently in each nation. This determines the presence or absence of coloronyms in the speech of representatives of different nationalities, as well as their varying frequency. This fact explains the qualitative and quantitative differences between the color-related units of the English and Karakalpak languages as part of phraseological and paremiological units.

Color words constitute one of the most important parts of the entire linguistic picture of any ethnocultural society and are inherently anthropocentric, as they express in words the result of human consciousness interpreting many types of the color spectrum. At the same time, the national-cultural qualities of color terms are defined semantically and functionally. This is explained by the differences in the worldviews of different ethnic groups.

In the compared languages, the semantic structure of color terms has a three-level organization represented by core, near-core, and peripheral zones. The core is created by prototypical color referents, while the near-core zone contains values close to the prototypical referents. In English-speaking and Karakalpak-speaking cultures, color meanings are distinguished by their core and peripheral areas. Differences are identified in the peripheral zone due to the unique characteristics of the cultural and historical traditions of these peoples.

DISCUSSION

Color is not a neutral medium; it is shaped by a culture's worldview, history, and linguistic traditions. While the physiology of color perception is universal, its conceptualization is culturally constructed. Scholars like Wierzbicka argue that colors serve as cultural memory devices and prototypes within language. Structural modifications of phraseological units reveal the dynamic interaction between culture, cognition, and language.

CONCLUSION

In various discourses, color units are used in phraseological expressions with usual (traditional) and occasional components. The occasional use of phraseological units containing color names in both languages involves utilizing a wide arsenal of linguistic tools to modify the cognitive-semantic structure of fundamentally stable linguistic units: expanding the composition of components, replacing structural parts, contamination, mutual actualization, ellipsis, and aphorism. Structural and semantic changes in phraseological units with a color component are determined by the communicative and pragmatic conditions for the functioning of stable linguistic units with the studied component in contextual and discursive situations, which are also characterized by the visual aspect of reflection.

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