Faculty of International Relations
Department of Translation and Intercultural Communication
Field of study: 45.04.02 Linguistics
Major: Modern technologies in teaching English

DEFENCE APPROVED
The head of the department
T.Yu. Ma
« 12 » 06 2023

MASTER'S THESIS
on the topic of
Colour terms in the English language

Thesis executor
135-om group   *Xu Nan*   Nan Xu

Academic supervisor
assistant professor, candidate of philological sciences *Н.Зал* N.M. Zalesova

The head of the master's degree program   9.06.2023
professor, doctor of philological sciences   T.Yu. Ma

Compliance check   9.06.2013
the head of the department   T.Yu. Ma

The reviewer
assistant professor, candidate of pedagogical sciences *Яцк* L.P. Yatsevich

Blagoveshchensk 2023

1

Faculty of International Relations
Department of Translation and Intercultural Communication

APPROVED
The head of the department
_____ Ma _____ Ч.Yu. Ma
« _01_ » _09_ 2023

Assignment

To the master's thesis of the student **Nan Xu**

1. The topic of the thesis: ____ **Colour terms in the English language** ____

(Approved by the order from 23.05.2023 № 1245-п2
2. The date of the thesis final version submission: _____ 13rd of June 2023 _____

3. The thesis baseline information: scientific works on colour terms, linguistics, culture and their application in the English language

4. The contents of the thesis (the objectives necessary to achieve):

1) Colour word theories and their development through the time;

2) Colour categories, terms and naming systems within the culture;

3) Representation of colour terms in the English language and culture.

5. Appendix list (schemes, graphics, tables and other illustrative material):

_____ 13 tables, 6 diagrams _____

6. Thesis advisors (by chapters):

7. The date of assignment issue: the 1th of September 2022

Academic supervisor: N.M. Zalesova, assistant professor, candidate of philological sciences, assistant professor
(last name, first name, patronymic name, post, advanced degree, academic title)

The assignment is subject to execution (date): _____ Nan Xu_____
(student's signature)

2

ABSTRACT

The thesis is comprised of 84 pages, 13 tables, 6 diagrams, 85 references and includes introduction, chapter 1, chapter 2, chapter 3 and conclusion.

COLOUR, COLOUR THEORIES, COLOUR TERMS, COLOUR CATEGORIES, COLOUR NAMING SYSTEMS, CULTURE, LANGUAGE, WHITE, BLACK, RED, GREEN, YELLOW, BLUE

The thesis deals with the colour terms the way they are represented in the English language and culture.

The relevance of the work is proved by the fact that colour is the basic concept of humanity: it is widely presented in the language units of the English language and culture. Their careful study helps to understand the mentality of the English-speaking people and find out more about their personality and their own specific perception of the world.

The objective of the thesis is to study the basic colour terms through the number of linguistics units and find out their peculiar use in the English language and culture.

The object of the study is the basic colour terms in the English language and culture.

The methods of the study are the following: continuous sampling method, quantitative estimation method, description method, context analysis method, comparative analysis method, interpretation method.

The thesis main results were presented at the scientific conference "The Day of Science-2023" (AmSU, Blagoveshchensk) and at the conference "Language. Culture. Communication" (AmSU, Blagoveshchensk). There were published two scientific articles: "Colour terms: different approaches to definition" and "Colour representation in the English language and culture (at the example of colour green)".

LIST OF CONTENTS

INTRODUCTION

The thesis deals with the colour terms the way they are represented in the English language and culture.

Colour remains important and more meaningful than a mere adjective due to its manifestation in emotions, objects, signs, and symbols. It provides different connotations and depths, considering that they hint and give the illusion of choices, events, or activities. In the English language, colour is significant as it can ensure that we interact and effectively communicate various issues that otherwise would not be expressed efficiently without mentioning them.

Colour terms and their categories are crucial in helping us communicate and shape our perception of the vast spectrum of colours. The expanded variety of colours through the use of various descriptors, including tint, shade, and tone, are valuable in various fields, including fashion and interior decoration, where precise colours are required to achieve the desired objective. Therefore, there is a need to appreciate and embrace the various possibilities in the colour spectrum as they allow us to have a diverse range of colours that facilitate effective communication and foster a deep connection with the visual world.

The relevance of the work is proved by the fact that culture plays a significant role in determining which colours are important or salient in a particular society. Cultural upbringing and socialization play a role in shaping colour perception. From a young age, individuals are exposed to cultural norms and practices that influence the understanding and interpretation of colours. Cultural exposure and learning shape individuals' colour preferences, biases, and emotional associations with specific colours. So, in each culture the perception of colours is unique and therefore makes the present work up to the point.

The object of the study is the basic colour terms (white, black, red, green, yellow, blue) in the English language and culture.

The subject of the study is semantic components of the basic colour terms

(white, black, red, green, yellow, blue) revealed in the English online dictionaries.

The objective of the thesis is to study the basic colour terms (white, black, red, green, yellow, blue) through their definitions and idioms and find out their peculiar use in the English language and culture.

The objective is realized through a number of **aims:**

1)   to study colour word theories and their development through the time;

2)   to explore colour categories, terms and naming systems within the culture;

3)   to reveal the semantic components of basic colour terms (white, black, red, green, yellow, blue) in the English online dictionaries;

4)   to compare revealed semantic components of basic colour terms (white, black, red, green, yellow, blue) with each other and find the most negative and the positive colour in the English language;

5)   to make conclusions and systematize all the information that have been studied and revealed.

The methods of the study are the following: continuous sampling method, quantitative estimation method, description method, context analysis method, comparative analysis method, interpretation method.

Theoretical background of the research is comprised of the works of such linguists as B. Berlin, M. Bornstein, R. Chen, E. Gibson, J. Kaplan, E. Komorowska, W. Phillips, B. Saunders, A. Steinvall, A. Wierzbicka, C. Witzel, N. Zaslavsky and others.

The material of the study is the following: definitions of colour terms and 99 idioms with the colour component (white, black, red, green, yellow, blue) taken from various English dictionaries and websites (Cambridge dictionary, Collins dictionary, Macmillan dictionary, Merriam-Webster dictionary, The Free dictionary, Idioms On Line).

Academic novelty is that colour terms are studied first time in the comparative way to identify the role they play in the English language and culture

and reveal which color is the most positive and negative one.

Theoretic significance of the research is that it contributes to the development of colour theories and helps identify the main cultural representations of basic color terms of the English language.

The practical value of the work is that the obtained research results make it possible to apply them in the process of teaching English, as well as during lectures and seminars on linguo-culturology and intercultural communication.

Approbation. The thesis main results were presented at the scientific conference "The Day of Science-2023" (AmSU, Blagoveshchensk) and at the conference "Language. Culture. Communication" (AmSU, Blagoveshchensk). There were published two scientific articles: "Colour terms: different approaches to definition" and "Colour representation in the English language and culture (at the example of colour green)".

Provisions submitted to defence:

1)   The colour black has the biggest number of negative semantic components in its semantic structure and the smallest number of positive semantic components. This is the only colour that has 11 negative semantic components fixed in the definition (compared with 1 in white, 2 in red, 3 in green, 2 in yellow, 2 in blue). It shows its perception in the English language and culture as the colour mostly describing human wickedness and downsides: gloomy mood, cruelty, cynicism, anger, misery, depression, dishonesty, untrustworthiness, disreputability and others.

2)   The colour green has the biggest number of positive semantic components and the smallest number of negative semantic components in its semantic structure. This is the only colour that has 2 positive semantic components fixed in the definition (compared with 0 in blue, yellow, red, black and 1 in white). In the English language and culture green is perceived as the colour meaning all the possible things connected with the environment, conservation, political movements aimed at protection and affecting the surrounding the world as little as

possible. It is also used to show that people can be successful, lucky and rich (having a lot of dollars that are green).

3)   Blue is the second colour which has the biggest number of negative semantic components, though only 2 of them are fixed in the dictionary. Most of them are presented in the idioms and describe people who are sad and depressed, angry and drunk, exhausted and fussy, hopeless or too busy. Blue is used to reveal the situations that are unexpected or happen very seldom, can be sudden and unwelcome, unknown and difficult to choose from.

4)   White is the second colour that has the biggest number of positive semantic components and has the biggest number of components that are neutral. They describe the colour itself and the things that possess this colour such as people, blood cells, clothes, hair, part of an egg or an eye, wine, and coffee. On the positive side white becomes the symbol of respect, freedom, hope, happiness, justice and correctness.

6) Red is the third in the rating of positive semantic components and the fourth in the rating of negative semantic components. Negative connotations appear when the person's face becomes red because of a number of negative emotions such as embarrassment, anger, shame or due to physical problems like being out of breath. On the other hand, red is also connected with happy and funny moments of a person's life as well as with some formal ceremonies.

6) Yellow is the only colour that has the least number of semantic components and only one positive. It is mostly used negatively and reveals such traits of personality as jealousy and cowardness, and shows the tendency to make a sensation or to deceive somebody.

1 COLOUR WORD THEORIES AND THEIR DEVELOPMENT THROUGH THE TIME

1.1 From ancient Greece till the 19th century

When people first see the colour, there is an impulse to describe the colour. This impulse led to colour words. The basic colour words in human language originated from human's basic perception of nature. The exploration of the relationship between colour perception and colour expression can be traced back to ancient Greece[1]. The classical dissertations about colour perception by philosophers such as Plato and Aristotle laid a philosophical foundation for later academic research and the establishment of new theories.

In the 17th century, British scientist Isaac Newton's experiments on physical optics revealed the mystery of the colour of matter; that is, the colour of matter is caused by the different reflectance and refractive index of light of different colours on the object[2]. Since then, Newton's colour optical physics theory has replaced traditional philosophical reasoning, making colour research embark on scientific development.

In 1800, Goethe published his Treatise on Colour. Physicists criticized this two-volume work of more than 140 pages for a long time. Still, many famous physicists, such as Heisenberg and others, evaluated very highly in this century. For example, Heisenberg said, "The chromatics of Goethe and Newton... ... You're talking about two completely different levels of the real thing." "Goethe's struggle against physical chromatics must continue today on an expanded front," he added. Colour words are the language expression of the colour concept, the result of human colour cognition, categorization, and natural language coding, and the words used to describe the colour attributes of things (hue, brightness, and

---

[1] Gage, J. What meaning had colour in early societies? Cambridge, 1999. Pp.109-126.
[2] Mach, E. The principles of physical optics: an historical and philosophical treatment. 2013. URL: https://books.google.co.ke/books?hl=en&lr=&id=7dPCAgAAQBAJ&oi=fnd&pg=PA1&dq=Mach (retrieved 26.05.2023)

saturation)[3]. Because it involves the relationship between language, culture, and thinking, it has attracted wide attention and has become one of the cutting-edge topics in contemporary linguistics research. Since Gladstone put forward and discussed the problem of colour words in 1858, the research on colour words has a history of more than 160 years[4]

Relevant research has been carried out in the fields of anthropology, ethnology, cognitive psychology, linguistics, and so on. The research contents involve the acquisition sequence, characteristics, referential content, semantic structure, and associative meaning of colour words. A considerable amount of theoretical work has been produced. So, the studies about colour started long ago in ancient Greece, were scientifically developed after Newton researched colour, and were further observed in the works of Goethe, Heisenberg, Gladstone, and other scientists. This proves that the idea of colour is important not only for physics, but linguistics, anthropology, ethnology, and cognitive psychology as well.

1.2 The impact of linguistic relativity theory on colour word theories

Since the first half of the 20th century, the study of colour words in the sense of linguistics has been mainly carried out along the main line of the development direction of the theory of linguistic relativity and the theory of linguistic evolution[5]. It not only explores the previous blank of human cognitive ability and field but also has a little novelty and an extraordinary spirit of scientific exploration. Humboldt emphasis on the significance of language is vital in the understanding of the concept of colour[6]. Thus, it is instrumental in shaping how we perceive and categorize colour, although it may have varying meanings due to differences in systems and cultural perspectives that are unique. In this case,

---

[3] Kemertelidze, N., Giorgadze M. Impact of Colour Symbolism on English Colour Idioms and their Georgian Equivalents. 2021. URL: https://rsglobal.pl/index.php/ijitss/article/view/1922 (retrieved 25.05. 2023)

4 Lindsey, D. T., Brown, A. M. Lexical color categories. 2021. Pp. 605-631.

5 Bohnemeyer, J. Linguistic Relativity. 2020. Pp.1-33.

6 Underhill, J. W. Humboldt, worldview and language. URL: https://books.google.co.ke/books ?hl=en&lr=&id=xGrBgAAQBAJ&oi=fnd&pg=PP1&dq=Underhill, (retrieved 28.05.2023).

language helps in dividing the colour spectrum through a linguistic distinction[7]. However, this can affect how individuals perceive and interpret colour, as some languages may have unique words for shades of colour. Individuals from societies with a language with a single word for describing colour, i.e., yellow, may have a different perception and understanding of colour due to linguistic categories.

The formation of views has an impact and have different expressions of language relativity, but the core beliefs that Whorf proposed regarding the language relativity principle of linguistic relativity principle can be summarized as follows:

a)   language learning shapers system itself is a concept;

b)   we divide nature along lines set by our mother tongue. Any individual is always subject to some form of interpretation. They slice and dice nature in different ways;

c)   the principle of relativity, the same physical evidence, is impossible for us to make all observers unless he got the same universe image. Their language backgrounds are similar or can be calibrated to each other in some way[8].

The principle of three principles is the basic idea of linguistic relativity. Despite many dissidents, no one has been able to overturn it without dispute in the different languages and cultures. The different understanding of the things that exist in the same objective is obvious.

 In view of the unique semantic, grammatical structure, and cultural connotation of the native Indian language, Sapir and Whorf subsequently proposed the hypothesis of "linguistic relativity," believing that culture affects thinking through language and the difference in language types determines the difference in the way people perceive the world[9]. Each language gives its users a unique

7 Fasold, R. W., Connor-Linto, J. An introduction to language and linguistics. Cambridge University Press, 2014. P.14.

8 Miller, R. L. The linguistic relativity principle and Humboldtian ethnolinguistics. URL : https://doi.org/10.1515/9783110823165 (retrieved 27.05.2023).

9   Pae, H.K. From linguistic relativity to script relativity. URL : https://www.researchgate.net/publication/346219680_From_Linguistic_Relativity_to_Script_Relativity Pp. 37-58.

semantic structure and codifies colour perception experiences in its own unique way.

Gleeson compares the different ways English divides the spectrum with Shona (an indigenous language in Rhodesia) and Bassa (an indigenous language in Liberia). According to the Sapir-Whorf hypothesis, Gleason and Conklin put forward the linguistic relativity of colour words. The basic idea is that the different colour categories in different languages come from the different segmentation of the continuous spectrum[10]. The language system arbitrarily determines this kind of segmentation and has nothing to do with external factors. Each colour word has the same status; colour words are largely subject to cultural factors, and their number and meaning vary from culture to culture. Shona and Bassa are indigenous colours that the culture has influenced and differ from English[11]. The Zimbabwe and Liberia languages differ, and they are unique, leading to a difference in the terminologies of the colour spectrum.

The linguistic colour categories differ across languages, including the position of their category boundaries. In this case, the perception of colour is categorical due to the number of qualitative discrete designated in English, including red, green, yellow, and blue[12]. Research reveals that colour discrimination in various categories is easier compared to equivalently spaced colours in the same category. This effect has been referred to as categorical perception, with the relationship between the two sets of colour categories, linguistic and perceptual, still remaining an issue of debate. According to Humboldt, linguistic relativists will term the two systems as isomorphic, with

---

[10] Jiang, G.A Reinterpretation of Linguistic Relativity: From the perspective of linguistics. 2020. URL : https://books.google.co.ke/books?hl=en&lr=&id=rJAMEAAAQBAJ&oi=fnd&pg=PA9&dq=Jiang (retrieved 25.05.2023).

[11] Sims, J. M. The Whorfian Hypothesis. 1997. URL : https://files.eric.ed.gov/fulltext/ED407849.pdf (retrieved 25.05.2023).

[12] Zhou, S. A cognitive analysis of conceptual metaphors of color idioms in English and Chinese based on data mining. 2021. URL : https://www.researchgate.net/publication/343107871_A_Cognitive_Analysis_of_Conceptual_Metaphors_of_Color_Idioms_in_English_and_Chinese_Based_on_Data_Mining.

language-constructing perceptual categories[13].

The physiological basis of colour categories remains unknown, although the perceptual primacy of red, green, yellow, and blue has been identified. Secondary categories, including orange, are formed by the combination of two primary categories; hence a physiological account for a colour category needs to be embraced[14]. At a behavioral level, colour categories are perceived to be present before language. Infants at four months have a pattern of describing colours, including the primary and the secondary colour categories[15]. Thus, categorical response for secondary boundaries of colours such as red-pink has some innateness of colour categories. Therefore, even with colour categories being innate and universal, this does not preclude the possibility of the modification of a later experience.

So, the main idea of Sapir and Whorf and their theory of "linguistic relativity" is that culture affects thinking through language and the difference in language types determines the difference in the way people perceive the world. Each language gives its users a unique semantic structure and codifies colour perception experiences in its own unique way.

1.3 Berlin and Kay's linguistic evolution theory and its influence on further colour word research

Sapir-Whorf hypothesis triggered anthropologist Berlin and linguist Kay to do empirical research and literature research on the basic colour word system of 98 languages[16]. Berlin and Kay published a classic paper on the study of colour words: Basic Colour Words: Their Universality and Evolution. They found that the 11 universal basic colour categories of human language: *white, black, red, green, yellow, blue, brown, purple, pink, orange, and grey* appear in strict order of

---

[13] Underhill, J.W. Humboldt, worldview and language. Edinburgh University Press. URL: https://books.google.co.ke/books ?hl=en&lr=&id=xGrBgAAQBAJ&oi=fnd&pg=PP1&dq=Underhill, (retrieved 28.05.2023).

[14] Boster, J. S. Categories and cognitive anthropology. Elsevier, 2005. Pp. 75-106.

[15] Hardin, C.L. Berlin and Kay theory. 2013. P.48.

[16] Lucy, J.A., Schweder, R.A. Whorf and his critics: linguistic and non-linguistic. 1979. URL: http://home.uchicago.edu/~johnlucy/papersmaterials/1979%20lucy-shweder.pdf (retrieved 26.05.2023).

occurrence in different language systems[17]. In addition, they put forward two important concepts, "focal colour" and "implicational hierarchy of basic colour terms," determined four standards of basic colour words, and established the point of semantic universality[18]. This shows that the Sapir-Whorf hypothesis is an extreme theory of linguistic relativity. After constant revision and improvement, the linguistic evolution theory of Berlin and Kay has gradually developed into the mainstream theoretical paradigm of colour word research, and its theoretical propositions, research results, and research methods have been increasingly widely applied and verified in the field of the colour word research. Kay and McNeill introduced fuzzy set theory into the research of meaning category of colour words and revised and supplemented the basic colour word theory from the perspective of human neurophysiological structure and fuzzy set theory. A new basic colour category system is established, and it is shown that human cognition of colour is the product of the real-world physiological function, cognitive mechanism with fuzzy set characteristics, and cultural selection. Kay, Berlin, and Merrifield's 1976 empirical study of 110 languages around the world established the important role of visual physiology in the evolution of basic colour words.

Rosch, an American cognitive psychologist, based on the study of basic colour words by Berlin and Kay conducted a series of psychological experiments on focus colour and proved that focus colour's prominence in perception – cognition came from human visual organs' perception of colour. The term "prototype" was used to replace "focus." Thus, avoiding the misunderstanding caused by the "center" meaning of "focus"[19]. In Rosch's opinion, focal colours are more prominent than non-focal colours in perception, have more cognitive

[17] Berlin, B., Basic Color Terms. California. 1991. URL : https://www.scirp.org/ (S(vtj3fa45qm1ean45vvffcz55))/reference/ReferencesPapers.aspx?ReferenceID=1331178 (retrieved 26.05.2023).

[18] Taylor, J.R. Linguistic categorization. Oxford, 2003 / URL : https://books.google.co. ke/books?hl=en&lr=&id=z2LHUS7V3xsC&oi=fnd&pg=PP1&dq=Taylor (retrieved 25.05.2023).

[19] Battleday, R.M. Capturing human categorization of natural images by combining deep networks and cognitive models. 2020. P. 5418.

stability, and can be remembered more accurately[20]. In colour naming, focal colours are spoken more quickly and acquired earlier by children.

Rosch's empirical research shows that the colour word category is a class-typical category, the category has a class-typical structure, category members have membership differences, and category boundaries have fuzzy characteristics[21]. This theory challenges Aristotle's classical category theory from the cognitive psychology perspective and validates and develops Berlin and Kay's theory of the evolution of basic colour words language.

Benefiting from Berlin and Kay's linguistic evolution of the basic colour words, Rosch's "stereotypic" theory, and a wealth of research from the fields of psychology, cognition, and linguistics, Lakoff, one of the founders of American cognitive linguistics, clarified the internal relationship among the objective world, brain mechanism, concept category, colour classification, and semantic structure, laying a foundation for cross-cultural research on colour words[22].

Wierzbicka has reinterpreted the evolution stages of basic colour words proposed by Berlin and Kay from the perspective of cognitive linguistics and proposed the semantic structure of colour words[23]. She argues that humans have the same sense of colour, but the conceptualization of colour varies from culture to culture; this relativity cannot be overstated. From the perspective of cognitive linguistics, she reorganizes the semantic components of basic colour words and divides them into four types: 1) intuitive components; 2) "colour" components; 3) negative (exclusive) components; 4) prototype components.

Berlin and Kay's theory has effectively explored the relationship between

[20] Taylor, J.R. Linguistic categorization. Oxford. 2003. URL: https://books.google.co.ke/books?hl=en&lr=&id=z2LHUS7V3xsC&oi=fnd&pg=PP1&dq=Taylor (retrieved 26.05.2023).

[21] Berlin, B., Basic Color Terms: Their Universality and Evolution. California. 1991 / URL: https://www.scirp.org/(S(vtj3fa45qm1ean45vvffcz55))/reference/ReferencesPapers.aspx?ReferenceID=1331178 (retrieved 26.05.2023).

[22] Kurowska, K. Asymmetrical Portrayal of Gender in Magazines for Men with Particular Reference to Sexuality. 2021. URL: https://bip.ur.edu.pl/storage/file/core_files/2021_/7/16/98d2590c30c53733f3fee16b4862e625/Kurowska%20K.%20-%20rozprawa%20doktorska.pdf (retrieved 25.05.2023).

[23] Battleday, R.M., Peterson, J.C., Griffiths, T.L. Capturing human categorization of natural images by combining deep networks and cognitive models. 2020. P. 5418.

language, culture, and perception of colours. There is a universal progression in the development of colour in various cultures and language-speaking groups[24]. Language has evolved at various stages, with colour terms being categorized in a specific order. The stages through which language has evolved can be categorized into six stages. The first stage is Dark and Light, whereby there is a distinction between dark and light colours, including black and white. This is a universally recognized colour term that is commonly used when making distinctions between colours. The second stage is red, and it has evolved in most languages after the dark and colour terms. Thus, Berlin and Kay emphasize the term for red in the colour term system on cross-cultural studies and linguistic analysis[25]. The authors also call for a need to recognize the colour red in the universally present languages because they believe that it is fundamental in the primary colour categories. This remains a prominent colour in the natural world, including ripe fruits, blood, and even fire, contributing to the early recognition and linguistic labeling. However, this second stage can vary depending on languages, which can vary within families and cultures.

Berlin and Kay have noted the third stage of colour term evolution is Green or Yellow. This stage tends to recognize a term for either green or yellow but not both simultaneously. It is less universally consistent compared to the first two stages, and the variation across cultures and languages brings this about. Moreover, this variation is also contributed by a lack of clear cut between green and yellow, like that of dark and light, and red. Therefore, there is a diverse colour term system for these colours in various languages and cultures. According to Berlin and Kay, languages need to develop a colour term for green or yellow by considering the environmental conditions, cultural association with the colours, and the significance of the colour within a given community. For example, regions with

[24] Kurowska, K. Asymmetrical Portrayal of Gender in Magazines for Men with Particular Reference to Sexuality. 2021. URL : https://bip.ur.edu.pl/storage/file/core_files/2021__/7/16/98d2590c30c53733 f3fee16b4862e625/Kurowska%20K.%20-%20rozprawa%20doktorska.pdf (retrieved 25.05.2023).

[25] Berlin, B. Basic Color Terms: Their Universality and Evolution. California. 1991. URL : https://www.scirp.org/(S(vtj3fa45qm1ean45vvffcz55))/reference/ReferencesPapers.aspx?ReferenceID=13 31178 (retrieved 26.05.2023).

green vegetation are more likely to develop the term green, while those in desert-like areas are more likely to develop the term yellow. The historical and cultural reasons are also likely to contribute to the choice of either colour green or yellow as the next colour term[26]. For example, the cultural significance attached to these colours is more likely to influence the priority in a language colour vocabulary hence a significant factor that needs to be noted. From these perspectives, it is evident that these colours are not universally consistent across languages due to various factors, including environmental influence[27]. The variance in language and culture plays a significant role in the choice of terms for different shades of green or yellow in the diverse colour term systems.

The fourth stage of colour term evolution is blue, as noted by Berlin and Kay. This colour is likely to develop in various languages and cultures following the first three stages. Including this fourth stage has been considered a great milestone in the evolution of the colour term. The colour blue has been categorized in the fourth stage because the authors believe it represents the perceptual distinction that is more challenging to perceive and categorize than the other basic colour categories. Cultural, linguistic, and physiological factors have contributed to the development of the colour term blue. For example, the physiological factors include fewer receptors for blue light in the human eyes compared to other colours. This leads to the perception of blue shades as more complex, contributing to the development of the colour term for blue.

The fifth stage proposed by Berlin and Kay is the emergence of the colour term brown, which can evolve in many languages. The authors believed this colour is salient and can capture a distinct and recognizable nature and cultural contexts[28]. The colour has been associated with earth, soil, and other natural materials hence representing a range of muted and dark shades that are not represented by the dark

---

[26] Saunders, B. Revisiting basic color terms. 2000. Pp.81-99.
[27] Berlin, B. Basic Color Terms: Their Universality and Evolution. California. 1991. URL: https://www.scirp.org/(S(vtj3fa45qm1ean45vvffcz55))/reference/ReferencesPapers.aspx?ReferenceID=1331178 (retrieved 26.05.2023).
[28] Ibid.

and light categories. Other features in which the colour term brown can be found include landscapes and organic materials, making it significant linguistic labeling[29]. Some languages have some symbolic significance of this colour, including cultural practices and nature, while others may completely lack its specific term. The diversity in the linguistic system globally contributes to the variation in the evolutionary progression of this colour term as various factors, including cultural and linguistic factors. Therefore, it is important to acknowledge the complexities and variations that exist within various languages and cultures in society as they affect this colour term, brown.

Lastly, Berlin and Kay advocated for the development of the terms purple, pink, orange, and grey. These colours represent a further expansion of language colour vocabulary and may also vary significantly across languages and cultures[30]. Some culture and language-speaking groups may have specific terms for these colours rather than treating them as single-word terms. For example, a combination of cultural and historical perspectives is likely to make the members of a given culture associate these colours with a specific object, cultural practice, or symbol. In this case, the colour will play a significant role in recognition and naming, including pink colour being associated with femininity by some cultures. Therefore, these colours may have a nuance that differs between cultures due to linguistic structures and salience within a particular society. The colours can lead to a recognizable boundary that contributes to a variation in linguistic categorization within a particular language community.

In summary, Berlin and Kay's theory of the basic colour words systematically summarize the development patterns of basic colour words in human language, causing a great sensation in the fields of linguistics and anthropology, and scholars have varying opinions on its conclusions. The colour theory is significant in ensuring an understanding of the significant variation and

---

[29] Saunders, B. Revisiting basic color terms. Pp. 81-99.
[30] Berlin, B. Basic Color Terms: Their Universality and Evolution. California, 1991. URL : https://www.scirp.org/(S(vtj3fa45qm1ean45vvffcz55))/reference/ReferencesPapers.aspx?ReferenceID=1331178 (retrieved 26.05.2023).

diversity of colour term systems across different cultures. As evident in the six stages of colour terms development, there is a need to acknowledge that each colour term may differ from one culture to another and the language communities. A combination of biological, cultural, and perceptual influences has contributed to diversity and variation in the understanding of colour terms as used in various linguistic communities globally. Therefore, Berlin and Kay's work on colour should be embraced and appreciated as they contribute to understanding our environment, community, and society.

1.4 Other views on colour word research

Lucy, an American professor of anthropology, has sharply criticized Berlin and Kay's research methods. He pointed out that Berlin and Kay used the colour chart devised by Munsell at the beginning of the 20th century to study colour naming and colour choice of subjects in different languages, ignoring the scope of reference of colour words and their specific cultural connotations and failing to enable people to acquire sufficient knowledge of colour systems[31]. Lucy stressed that the study of colour words should analyze the language structure, not only the specific referential range of the category but also the formal distribution potential of the category. At the same time, the specific cultural connotation expressed by colour words should be considered. In this way, we can solve the cross-language regularity problem and its relationship with thinking. In addition, since the 1970s, the correlation between gender and colour words has attracted widespread attention in the academic community and has become a highlight of sociolinguistics, psycholinguistics, and cognitive linguistics. The findings suggest that women have a natural cognitive advantage when it comes to colour words. Compared with men, their colour word banks were more numerous and of higher quality, and they extracted colour words faster and named colours more accurately. It is particularly worth mentioning that in 2004, at the International Conference on "Progress in Colour Research" held at the University of Glasgow, many scholars from

---

[31] Lucy, J.A. Whorf and his critics: linguistic and non-linguistic. 1979. URL : http://home.uchicago.edu/~johnlucy/papersmaterials/1979%20lucy-shweder.pdf (retrieved 26.05.2023).

humanities and social sciences presented the latest theories, research methods, and results of colour research in various disciplines, and published two volumes of colour research papers after the conference: Advances in Colour Research Volume I: Language and Culture and Advances in Colour Research Volume II: Psychological Research[32]. It can be seen that the study of colour and colour words has been spread out comprehensively in related disciplines, and the research prospect is broad.

There are some other views on the character of basic colour terms. Thus, the anthropologist Anna Wierzbicka argues that the basic colour terms cannot be universal since they cannot apply to languages that lack a concept of colour[33]. Without a concept of colour, a language cannot have colour terms of the sort the Berlin-Kay tradition requires since such terms must be construed as referring (denoting) abstract colours, which people such as the Australian Walpiri (whom Wierzbicka discusses in detail) lack. The Berlin-Kay tradition's approach is to focus on denotation and ignore connotation. Wierzbicka argues that once you understand how connotative meaning is structured for some groups, you see that talking about their colour-related words having the sort of denotation Berlin and Kay take for granted is a mistake[34].

In a recent review of the current literature on colour naming and classification, the psychologists Lindsey and Brown focus on communication as the trend in much contemporary colour language research[35]. They claim that "while some aspects of the mental representation of colour in language are undoubtedly related to innate neural processes, other aspects of that representation are better understood with reference to the information-theoretic aspects of colour communication. Both of these processes may be influenced by the pragmatic relationship between the individual and his/her physical and cultural environment". At the same time, colour naming is not just an individual achievement but also a

[32] Komorowska, E. Progress in Colour Studies. Glasgow. 2013. P.259.
[33] Wierzbicka, A. The Semantics of Color. 2006. Pp.1-24.
[34] Ibid.
[35] Lindsey, D.T. Lexical color categories. 2021. Pp.605-631.

feat of socio-linguistic coordination. Others understand our use of coloured words and can act on those words, just as we can understand and act on theirs.

Other studies have continued questioning the colour-naming system due to factors like universality and cultural relativism. Researchers call for a need to have an effective categorization with consideration of the category boundaries that promote the idea of colour as either universal or culturally shaped. According to the study by Gibson et al. on colour naming across languages, the authors emphasize that colour categories are shaped by culture[36]. Their study uses the example of two-colour categories, including WARM and COOL, that have not been described in the study by Berlin and Kay. They emphasize that these two-colour categories are fundamental as they also relate to basic white or black categories that have been described in the first stage in Berlin and Kay hierarchies[37]. According to their research, the cross-linguistic similarities in colour naming significantly reflect the colour's universal usefulness[38]. This also reflects on the principle account of colour use that shapes how colour categories are reached. Using the results from the World Colour Survey of over one hundred languages, the authors also found that communication of chromatic appearances is better for WARM colours compared to COOL colours. This is evident from the Tsimane community that uses colour terms when describing a familiar object rather than coloured objects. The members of this culture use colour terms to communicate and name an artificially coloured object compared with natural objects, evidence that industrialization also plays a role in colour usefulness. Therefore, from their study, they concluded that colours associated with objects are more likely to have lower surprise than those associated with backgrounds.

Although the above studies have their own perspectives, they also have many limitations. For example, western scholars mostly follow the theoretical

---

[36] Conway, B. R. Communication efficiency of color naming across languages provides a new framework for the evolution of color terms. 2020. P.104086.

[37] Gibson, E. Color naming across languages reflects color use. 2017. Pp.10785-10790.

[38] Conway, B.R. Communication efficiency of color naming across languages provides a new framework for the evolution of color terms. P. 104086.

paradigms of language relativity and language evolution and adopt traditional anthropological and psychological research methods such as naming, mapping and focus determination, reaction time, naming consistency, etc. Most of them take English as the meta language and object language, and most of them take the basic category of colour words as the research object, rarely involving the subcategory of colour words non-basic colour words[39]. What is revealed is only a few aspects of many issues in the study of colour words.

So, there are many different opinions about colour and colour theories. Nowadays, people's research on colour is multi-field crossing and has achieved rich results. However, both in the past and now, the research on colour is accumulated in people's daily life and whatever the theory is, it has its grounds and makes the general understanding of colour more profound.

---

[39] Jonauskaite, D. Most and least preferred colours differ according to object context: new insights from an unrestricted colour range. 2016. Pp.15-35.

2 COLOUR CATEGORIES, TERMS AND NAMING SYSTEMS WITHIN THE CULTURE

2.1 Colour categories and terms

The research on basic colour words in the West has been fruitful, among which a general consensus is that colour is common in different languages, and the recognition of colour is one of the human beings' most basic cognitive categories[40]. There are different opinions about what factors influence colour perception in humans. One is cultural relativism. Scholars who hold this view believe that specific languages and cultures influence the human perception of colour.

The colour categories in different languages derive from their different shades of the continuous spectrum; which colour words cover which parts of the spectrum is arbitrarily determined by a language system, independent of factors outside the system; each colour word has the same status[41]. Second, cultural universalism. Colour categories are made up of overlapping subsets, and these may differ between cultures and language-speaking groups[42]. They are a prototype category hence some colours can better be described with a given category rather than others. For example, it is common to say slightly red or good red, while there are some single colours that are the best examples of the prototypes[43]. These single colours are usually from the prototype, rendering the colour category to be considered to have a fuzzy boundary. Some colours are marginal members, which discriminates the membership from prototypicality.

Berlin and Kay, who hold this view, argue that the categories and cognition of colour words are pan-human. There are colour words in all human languages (only the number of colour words is different), and the development of basic colour words is evolutionary and orderly; that is to say, the status of each basic

---

[40] Kurowska, K. Asymmetrical Portrayal of Gender in Magazines for Men with Particular Reference to Sexuality. 2021. URL : https://bip.ur.edu.pl/storage/file/core_files/2021/7/16/98d2590c30c53733f3fee16b4862e625/Kurowska%20K.%20-%20rozprawa%20doktorska.pdf (retrieved 25.05.2023).

[41] Dedrick, D. Colour classification in natural languages. 2022. Pp. 563-579.

[42] Cruse, D.A. Prototype theory and lexical semantics. 2014. Pp. 392-412.

[43] Dedrick, D. Colour classification in natural languages. Pp. 563-579.

colour word is different. There are focal colours and non-focal colours. Focal colours have a sudden dominance in perception and memory and are easier to recognize than non-focal colours. Therefore, the colour spectra on which colour vision depends vary continuously, and this leads to colour categorization in terms of a small set of discrete verbal labels[44]. Speakers of different languages partition colour space, although these differ across languages due to a variation in colour processing and meanings. As noted, some colours from marginal members may lead to discrimination of chromatic stimuli near the detection threshold. For example, saturation differences needed to discriminate a stimulus from white can be measured by considering hue. Research has revealed that there are fixed boundaries in the spectrum in that colours from distinct regions are discriminated against each other. Considering that language shapes the processing of colour, linguistics, in this sense, plays a significant role in colour processing.

So, at present, colour can be divided into three categories:

1   Basic colour terms:

These refer to those colour words that can naturally express the colour of things. These colours are commonly recognized and distinguished across cultures, and they remain relevant depending on the context and societal linguistics[45]. These colours correspond to perceptually distinct hues, typically associated with specific light wavelengths. Thus, they play a role in determining the colour's building blocks categorization, allowing one to identify and differentiate colour in a given setting[46]. Some common sets of basic colours share meanings across cultures and languages, making them significant in human cognition. The basic colours are: red, white, black, green, yellow, blue, purple, grey and brown[47]. Depending on culture or language, these colours have different meanings, although they are often

[44] Cruse, D.A. Prototype theory and lexical semantics. Routledge. 2014. Pp.392-412

[45] Kaplan, J.R. Color terminology, sensory stimuli, and the semantics of the questionnaire. 2022. Pp.575-598.

[46] Phillips, W.L. Cross- cultural differences in visual perception of color, illusions, depth, and pictures. 2019. Pp.287-308.

[47] Jonauskaite, D. Most and least preferred colours differ according to object context: new insights from an unrestricted colour range. 2016. Pp.15-35.

associated with a specific object, emotion, cultural practice, and symbolism. Therefore, their universality shows that they have a shared human experience and perception, making them effective tools for communication as they can help convey meaning.

No language appears to have more than eleven basic colour terms. Furthermore, these basic colour terms are ordered hierarchically. Berlin & Kay found that these terms occur in a fixed order in a language and reduced this process to a typology of seven stages[48], as can be seen in this scheme. See Table 1.

Table 1

Typology of seven stages

I	II	III	IV	V	VI	VII
White and Black	Red	Green or Yellow	Green and Yellow	Blue	Brown	Purple Pink Orange Grey

Because there are eleven basic colour terms, the number of possible basic colour term vocabularies is 2048. However, Berlin & Kay found that in reality there are only twenty-two:

1) white – black

2) white – black – red

3) white – black – red – green

4) white – black – red – yellow

5) white – black – red – green – yellow

6) white – black – red – green – yellow – blue

7) white – black – red – green – yellow – blue – brown

8) white – black – red – green – yellow – blue – brown – pink

9) white – black – red – green – yellow – blue – brown – purple

10) white – black – red – green – yellow – blue – brown – orange

11) white – black – red – green – yellow – blue – brown – grey

---

[48] Steinvall, A. English Colour Terms in Context: 2002. P.18. URL: https://www.diva-portal.org/smash/get/diva2:144764/FULLTEXT01.pdf (retrieved 26.05.2023).

12) white – black – red – green – yellow – blue – brown – pink – purple

13) white – black – red – green – yellow – blue – brown – pink – orange

14) white – black – red – green – yellow – blue – brown – pink – grey

15) white – black – red – green – yellow – blue – brown – purple – orange

16) white – black – red – green – yellow – blue – brown – purple – grey

17) white – black – red – green – yellow – blue – brown – orange – grey

18) white – black – red – green – yellow – blue – brown – pink – purple – orange

19) white – black – red – green – yellow – blue – brown – pink – purple – grey

20) white – black – red – green – yellow – blue – brown – pink – orange – grey

21) white – black – red – green – yellow – blue – brown – purple – orange – grey

22) white – black – red – green – yellow – blue – brown – pink – purple – orange – grey

This implicates that if a language should only have three basic colour terms in its vocabulary, those will be white, black and red. If there are four, it will be white, black, red and green (or yellow), and so forth. English is stage VII languages, and show pattern 22 in their vocabulary.

Hardin[49] explains that what differentiates basic terms from the rest of the stock of colour words is that the former ones are used by all native speakers. They are used more consistently than non-basic terms and with greater consensus. These criteria have been shown to segregate eleven basic terms from the rest of the colour terms in a variety of languages that have well-developed colour vocabularies. English can thus be seen as examples of languages with such well-developed colour vocabularies.

 2 Colours of objects

---

[49] Hardin, C.L. Berlin and Kay theory. 2013. P. 215.

The colour of objects, in this case, does not only refer to specific hues but also words that use the true colours of natural objects. This allows a more nuanced way of communication about colours and their variation, such as silver, gold, orange-red, apple-green, and lead-grey. These colours can best be identified and described through consideration of various descriptors, including shades, tints, and tones[50]. These descriptors ensure that one is more specific in the colour description, allowing them to convey the hue's base, intensity, brightness, and saturation. Shades of a colour entail the darker variation of a specific colour, including adding black to a colour[51]. For example, shades of blue can be used to describe colours like navy blue and royal blue to represent a darker variation of the colour. Tints are a lighter version of a colour usually brought about by adding white to the original hue. It may tend to be pastel-like in appearance, i.e., baby pink or pastel pink, that usually represents the lighter shades of the colour. On the other hand, the tone is created by adding a grey colour to make an object desaturated, unlike its original hue[52]. This can create a subtle variation whereby different tones of colours, i.e., olive green or sage green, are produced. Therefore, these three descriptors are significant in ensuring that one is more specific in colour descriptions. Thus, one can effectively describe a base hue in particular art and design, fashion, or interior decoration. Professionals in such fields and industries can, in the process, have much better precision when selecting and matching colours and come up with art that meet the desired visual effects, serving the intended purpose.

3 Colour words in the shade

The same colour, in a different light, in different environments, obtains different colour effects different; to express this effect, we have to use appropriate

---

[50] Jonauskaite, D. Most and least preferred colours differ according to object context: new insights from an unrestricted colour range. 2016. Pp.15-35.

[51] Phillips, W.L. Cross- cultural differences in visual perception of color, illusions, depth, and pictures. 2019. Pp. 287-308.

[52] Sharma, G. Digital color imaging handbook. 2017. P. 38.

words to express its shade, light, and shade. Words in this category are deep blue, dark blue, light yellow, pale grey, and bright red[53]. These colours have a more nuanced description, allowing one to effectively convey subtle differences and variations. Thus, it entails various gradients, intensities, and darkness or lightness levels within a specific colour[54]. For example, tints, tones, and shades can be added to a specific colour to convey the specific qualities and characteristics of colours. In this case, one can describe a colour beyond its simple hue by providing a more comprehensive understanding of its variation. Therefore, this category is relevant because it helps us create a more desirable visual effect and aesthetic and express an infinite range of colours in the surrounding.

So, colour words and their categories are crucial in helping us communicate and shape our perception of the vast spectrum of colours. The expanded variety of colours through the use of various descriptors, including tint, shade, and tone, are valuable in various fields, including fashion and interior decoration, where precise colours are required to achieve the desired objective. Therefore, there is a need to appreciate and embrace the various possibilities in the colour spectrum as they allow us to have a diverse range of colours that facilitate effective communication and foster a deep connection with the visual world.

If a language should only have three basic colour terms in its vocabulary, those will be white, black and red. If there are four, it will be white, black, red and green (or yellow), and so forth. English is stage VII languages, and shows pattern 22 in their vocabulary: white – black – red – green – yellow – blue – brown – pink – purple – orange – grey.

In this study only first six basic colour terms are studied. They are considered to be the most frequent and representative ones, so they have become the subject of the research.

---

[53] Kaplan, J.R. Color terminology, sensory stimuli, and the semantics of the questionnaire. 2022. Pp. 575-598.
[54] Jonauskaite, D. Most and least preferred colours differ according to object context: new insights from an unrestricted colour range. 2016. Pp. 15-35.

2.2 Colour naming systems

Colour naming systems are frameworks or methods for assigning labels or names to different colours. Colour naming systems provide a standardized way to describe colours across numerous domains. Even though colour naming is subjective to some extent due to cultural and individual variations, different systems have been formulated to establish consistency and facilitate colour identification. Basic colour terms are considered the foundation of a colour naming system, and the basic colour terms are often thought to have a universal basis while considering the perceptual and physiological characteristics of colour vision. In addition to basic colour terms, some languages possess specific and nuanced colour terms that differentiate shades and hues. For example, English terms such as "light blue" and "dark blue"[55].

The natural colour naming system is a commonly used colour naming system based on common language terms for colours. This system relies on culturally shared colour names, such as "red", "blue", and "green," which have evolved. Research by Collier[56] involved a cross-cultural analysis of colour terms, examining how languages categorize and name colours. He proposed a hierarchy of colour terms, where they suggested that languages typically develop basic colour terms for certain focal colours before expanding into additional terms for more specific shades. The research provided empirical evidence for the existence of universal patterns in colour categorization. It provided valuable insights into cultural and linguistic aspects of colour naming systems. It provided a significant reference for future researchers interested in the relationship between language, perception, and colour categorization.

In addition to natural language colour names, other systems are more precise and numeric. For instance, the Pantone Matching Systems, invented by Pantone

---

[55] Zaslavsky, N. Color Naming Reflects Both Perceptual Structure and Communicative. 2019. Pp.207–219. URL : https://doi.org/10.1111/tops.12395 (retrieved 24.05.2023).
[56] Collier, G.A. Basic Color Terms: 1973. P. 245. URL : https://doi.org/10.2307/412128 (retrieved 23.05.2023).

LLC, a company that specializes in colour management and providing standardized colour systems. The Pantone Matching system assigns unique numbers to specific colours, allowing for consistent colour reproduction in printing and design.

The RGB (Red, Green, Blue) colour model is another commonly used system, particularly in digital displays. It defines colours based on red, green, and blue light intensities. When different intensities of these primary colours are combined, they lead to a vast spectrum of colours. This system is utilized in computer graphics, televisions, and digital imaging[57].

The HSL (Hue, Saturation, Lightness) and HSV (Hue, Saturation, Value) colour models offer different approaches to describing colours. These models provide additional dimensions beyond the RGB colour model, which allows for more nuanced and intuitive colour representation. The HSL model, "Hue," represents the dominant wavelength of the colour, ranging from 0 to 360 degrees on the colour wheel. It describes the basic colour category, such as red, blue, or green. Saturation represents the colour's intensity or purity, which ranges from 0% (gray or desaturated) to 100% (fully saturated). However, lightness represents the brightness of the colour, ranging from 0% (black) to 100 % (white) while keeping the hue and saturation constant. HSV model, the value dimension replaces the lightness and represents the perceived brightness of the colour. It ranges from 0% (black) to 100 % (white), but unlike lightness, it does not maintain the hue and saturation constant when adjusted. The saturation and Hue dimensions function the same as the HSL model. These alternative colour models provide more flexibility in colour manipulation and selection. For instance, adjusting the hue allows for easy exploration and selection of different colour families, while adjusting saturation and lightness/value can modify the intensity and brightness of colours. HSL and HSV models are useful in various applications, including graphic design, image editing, and colour selection tools. They provide a more intuitive and user-friendly way to describe and work with colours, making them valuable alternatives

[57] Meyer, J. The Essential Guide to HTML5: Using Games to Learn HTML5 and JavaScript. 2010. URL: https://openlibrary.org/books/OL25560445M/The_Essential_Guide_to_HTML5. (retrieved 27.05.2023).

to the primary RGB colour model[58].

A meta-analysis by Zaslavsky[59] researched the cultural evolution and organization of colour naming systems across different languages and cultures. It explored how colour terms and categories develop and change over time within linguistic communities. He conducted large-scale analyses of colour naming data from a well-diverse range of languages and cultures. The research identified patterns and regularities in colour naming systems: the number, organization of colour categories, and the evolution of colour terms. It also suggested that cultural factors, such as social interactions and environmental influences, did shape the structure and organization of colour naming systems. It proposed a model of cultural evolution that explained how these systems emerge and evolve within different linguistic communities. The research provided insights into cultural and social influence on colour perception and categorization by examining colour naming systems across languages and cultures. The research also contributed to understanding how language, culture, and cognition interact in shaping the perception and conceptualization of colours.

Chaabouni[60] highlighted how artificial neural networks could develop efficient colour-naming systems. Artificial neural networks are computational models inspired by biological neural networks' structure and function. These networks can be trained to perform various tasks, which include colour naming, by learning patterns and relationships from data. In the context of colour naming, artificial neural networks can be trained on large datasets of colour information to develop efficient systems for categorizing and naming colours. When input data is processed and analyzed, networks learn to associate colour representations with appropriate colour names. The significance of the methodology and results of training artificial neural networks to develop colour-naming systems is the

[58] Brill, M. H. Color Appearance Models. 1998. P. 248-250.

[59] Zaslavsky, N. Color Naming Reflects Both Perceptual Structure and Communicative Need. 2019. P.207–219. URL: https://doi.org/10.1111/tops.12395 (retrieved 26.05.2023).

[60] Chaabouni, R. Communicating Artificial Neural Networks Develop Efficient Color-Naming Systems 2021. URL: https://doi.org/10.1073/pnas.2016569118 (retrieved 26.05.2023).

efficiency and accuracy of the trained models in recognizing and naming colours.

According to Bornstein[61], colour naming systems and tools are influenced by languages and cultures. For instance, some languages may have a smaller number of basic colour terms, such as words for "red," "green" while others may have more elaborate systems with distinct terms for a wide range of colours. The research has also shown how colours are categorized and named and can vary across cultures and languages, reflecting each community's specific needs and perceptions. It also interpreted how colour naming can influence colour perception in some cases. For instance, the presence of distinct colour categories in a language can enhance discrimination and recognition of colours within those categories.

So, there are a lot of different colour naming systems, such as the natural colour naming system, the Pantone Matching Systems, the RGB colour model, the HSL and HSV colour models and others. The most important conclusion is the one made by Zaslavsky about the fact that cultural factors, such as social interactions and environmental influences, shape the structure and organization of colour naming systems.

2.3 Culture influence on colour perception

Cultural influence on colour perception is referred to as how cultural factors shape and influence how individuals perceive, categorize, and name colours. Although a universal physiological basis exists for colour perception, cultural norms, languages, and social context can also affect how colours are perceived and interpreted. Cultural factors play a significant role in determining which colours are important or salient in a particular society. Cultural upbringing and socialization play a role in shaping colour perception[62]. From a young age, individuals are exposed to cultural norms and practices that influence the understanding and interpretation of colours. Cultural exposure and learning shape individuals' colour preferences, biases, and emotional associations with specific

---

[61] Bornstein, M.H. Color Vision and Color Naming: A Psychophysiological Hypothesis of Cultural Difference. 1973. P. 257. URL: https://doi.org/10.1037/h0034837 (retrieved 26.05.2023).
[62] Athanasopoulos, P. Does Grammatical Aspect Affect Motion Event Cognition? 2013. Pp.286–309. URL: https://doi.org/10.1111/cogs.12006 (retrieved 26.05.2023).

colours. For instance, a culture that highly values nature and the environment may prefer green hues. In contrast, a culture that associates yellow with joy and happiness may have a stronger positive response to that colour.

The Sapir-Whorf hypothesis, also referred to as linguistic relativity, suggests that the language we speak influences our perception and cognition. A study by Zollinger[63] investigated the hypothesis in the context of colour categorization to culture. The study utilized data from World Colour Survey, which collected data about colour naming and categorization across various languages and cultures. The study investigated whether differences in colour categorization across different cultures can attribute to colour perception. It highlighted how the presence or absence of specific colour terms in some cultures affected people's ability to distinguish and categorize colours.

Zollinger[64] in a meta-analysis, investigates how cultural factors impact the development of colour categorization in Japanese children. The meta-analysis focused on the differentiation between primary and derived basic colour terms in the Japanese language. Primary basic colour terms, such as "aka" (red) and "ao" (blue/green), are considered foundational in colour categorization. Derived basic colour terms, on the other hand, are created by combining two or more primary terms, such as "Midori" (green), which is derived from "ao" (blue/green) and "kairos" (yellow). The research examines how Japanese children learn and differentiate between primary and derived basic colour terms. It investigates the influence of cultural factors, such as exposure to different colour stimuli, linguistic input, and social interactions, on the development of colour categorization in Japanese children. The findings of the meta-analysis provide insights into the cultural shaping of colour perception and categorization. The research found that cultural factors play a significant role in acquiring and differentiating colour terms among Japanese children. The specific linguistic and cultural contexts in which

---

[63] Zollinger, H. Categorical Color Perception: Influence of Cultural Factors on the Differentiation of Primary and Derived Basic Color Terms in Color Naming by Japanese Children. 1988. Pp. 1379–82. URL: https://doi.org/10.1016/0042-6989(88)90069-7 (retrieved 26.05.2023).
[64] Ibid.

children are raised influence their ability to recognize and categorize colours according to primary and derived basic terms.

According to Gao[65], cultural influences on colour perception and symbolism are evident in various aspects of life, including rituals and ceremonies. An example of such cultural influences can be observed in using colour during funerals in Japan and China. Both countries hold an important aspect in funeral traditions representing mourning and reverence which differs from the Western association of mourning with the colour black. In Japan, white, or "Shiroi," is traditionally associated with death and is commonly worn by mourners during funerals and memorial services. Japan views white as a symbol of purity, and its use conveys respect and solemnity toward the deceased. Similarly, in China, white, or "bai se", is associated with mourning and is mostly worn by family members and attendees at funerals, expressing grief and respect. This stark contrast to Western funeral customs, where black is the predominant colour associated with mourning, highlights the cultural specificity of colour symbolism. In contrast to Western cultures, black is often chosen as a representation of mourning, sadness, and loss. The cultural conditioning of associating black with funerals and grief in the Western world stems from historical practices and cultural traditions. These cultural differences in colour symbolism demonstrate how perception and interpretation of colours can vary across societies. Historical, social, and linguistic factors shape the association of specific colours with emotions and cultural concepts. The symbolic meaning attributed to colours is ingrained in cultural norms and passed down through generations. The use of white in funerals in Japan and China, contrasting with the Western association of mourning with black, exemplifies the cultural influences on colour perception and symbolism which helps in understanding the cultural context to comprehend the diverse meanings attributed to colours in different societies.

---

[65] Gao, X.P. Analysis of cross- cultural color emotion. 2007. Pp. 223-29. URL : https://doi.org/10.1002/col.20321 (retrieved 26.05.2023).

Bradfield[66] conducted a meta-analysis to investigate the diversity of colour symbolism across cultures while highlighting the rich complexity of human perception and cultural interpretation. He found that colours carry symbolic meanings and associations that vary significantly from one culture to another, which reflects the unique historical, social, and linguistic contexts in which they are embedded. An example of cross-cultural colour symbolism is the association of red with luck and prosperity in many Asian cultures. In China, red, or "hong," is considered an auspicious colour associated with good fortune and joy. It is mostly used in celebrations and festive occasions such as weddings and during Lunar New Year. Also, red, or "lal", symbolizes purity, fertility, and celebration in India. However, in Western cultures, red is often associated with danger, passion, and intensity. Another example is the cultural significance of blue in Western societies is associated with calmness, tranquility, and trustworthiness. In contrast, several African cultures view blue as a colour of protection and spirituality, while in middle eastern cultures it is associated with protection against the "evil eye." In addition, the interpretation of colours can vary even within regions and countries. For instance, in Western culture, white often symbolizes purity and innocence, whereas, in some Eastern cultures, such as China and Japan, it is associated with death, mourning, and funerals. Similarly, the green colour can represent fertility and nature in many cultures, but in some Islamic cultures, it is associated with wealth and good luck. These examples illustrate the diversity and complexity of colour symbolism across cultures. The meaning attached to colours is shaped by a combination of historical, social, religious, and linguistic factors. Cultural practices, traditions, and beliefs influence how colours are perceived, valued, and used in various contexts. The meta-analysis conducted a cross-cultural colour symbolism, providing insights into how cultures construct and assign meaning to colours. It highlighted the dynamic relationship between perception, cognition, and cultural systems. The meta-analysis highlights the importance of understanding

---

[66] Bradfield. The Diversity of Color : An Analysis of Cross-Cultural Color Symbolism. Digital Commons, Andrews University, 2014. P.70.

these cultural variations, which helps individuals appreciate the diverse ways humans perceive and interpret the world around them. The diversity of colour symbolism across cultures underscores the subjective nature of colour perception and the intricate interplay between culture and cognition. Exploring cross-cultural colour symbolism allows for a deeper understanding of the multifaceted nature of human perception and sheds light on the profound influence of cultural contexts on the interpretation and meaning of colours.

Paramei[67] examined cultural differences in colour perception and preferences among East Asian, Caucasian, and Hispanic students. The study was to investigate how cultural factors shape individuals' colour perceptions and preferences, focusing on the influence of cultural background on colour preferences and the ability to discriminate between colours. The study utilized a combination of surveys and colour discrimination tasks to gather data from participants belonging to three cultural groups. The participants were asked to rate their preference for various colours and perform tasks that assessed their ability to differentiate between different shades of colours. The findings of the study revealed that there were significant cultural differences in colour perception and preferences. The research observed that East Asian participants showed a higher preference for cool colours (blue and green) and a lower preference for warm colours (red and orange) compared to Caucasian and Hispanic participants. This pattern aligns with the traditional cultural associations of colours in East Asian societies. Moreover, the study highlights differences in colour discrimination abilities between the cultural groups. East Asian participants tend to have a higher sensitivity to subtle differences in shades of colours, while Caucasian and Hispanic participants demonstrate a greater ability to discriminate between primary colours. This study suggested that cultural influences, such as language, cultural practices, and aesthetic preferences, play a significant role in shaping colour perception and

---

[67] Paramei, G. V. Singing the Russian Blues: An Argument for Culturally Basic Color Terms. 2005. Pp. 10-38. URL : https://doi.org/10.1177/1069397104267888 (retrieved 26.05.2023).

preferences. The study emphasized the importance of considering cultural factors when examining colour perception and acknowledged the need for further research.

Thus, different languages have varying numbers of colour terms and different boundaries for colour categories. This linguistic diversity can influence how individuals perceive and evaluate colours. For instance, some cultures may have specific terms for shades of blue that English does not differentiate, leading to differences in colour preferences and perceptions. Additionally, cultural practices, traditions, and aesthetic preferences contribute to cross-cultural variation in colour preferences. Some cultures have distinct art, fashion, and design traditions influencing colour choices. For instance, cultures that value minimalism and simplicity may prefer more neutral ad subdued colour palettes, while cultures that embrace vibrancy and ornamentation may gravitate toward bold and vivid colours.

Colour remains important and more meaningful than a mere adjective due to its manifestation in emotions, objects, signs, and symbols. It provides different connotations and depths, considering that they hint and give the illusion of choices, events, or activities. In the English language, colour is significant as it can ensure that we interact and effectively communicate various issues that otherwise would not be expressed efficiently without mentioning them[68].

3.1 White and its representation in the English language and culture

White is the colour of white snow or milk. It is a result of the reflection of all visible rays. In Western cultures, white symbolizes purity, cleanliness, and virginity, which is why brides usually wear a white dress on their wedding day.

The definition of colour white was studied in the Collins dictionary[69] and it was found out that:

1)   something that is white is *the colour of snow* or milk;

2)   *a White person* has a pale skin and belongs to a race which is of *European origin*;

3)   if someone goes white, the skin on their face *becomes very pale*, for example because of fear, shock, anger, or illness;

4)   *white wine* is pale yellow in colour;

5)   *white coffee* has had milk or cream added to it;

6)   *white blood cells* are the cells in your blood which your body uses to fight infection;

7)   people who believe in *white magic* believe it is possible to use magic to do good things;

8)   *the white of an egg* is the transparent liquid that surrounds the yellow part called the yolk;

---

[68] Zhou, S.A cognitive analysis of conceptual metaphors of color idioms in English and Chinese based on data mining. 2021. Pp. 349-355.

[69] Collins Dictionary. URL : https://www.collinsdictionary.com/dictionary/english/white

9)   ***the white of someone's eye*** is the white part that surrounds the coloured part called the iris;

10)   whites are ***white clothes*** that you wear for playing some sports, for example tennis or cricket.

The Collins dictionary thesaurus[70] gives the following descriptions of white:

1)   in the sense of ***pale*** (pale, because of illness, fear, shock, or another emotion): "He turned white and began to stammer";

2)   in the sense of ***silver*** (of hair having lost its colour, usually from age): an old man with white hair.

All the basic meanings are presented in Table 2.

Table 2

Semantic components of colour ***white*** revealed in a dictionary

№	semantic components	neutral	positive	negative
1	the colour of snow	+		
2	a White person	+		
3	become very pale			+
4	white wine	+		
5	white coffee	+		
6	white blood cells	+		
7	white magic		+	
8	the white of an egg	+		
9	the white of someone's eye	+		
10	white clothes	+		
11	silver	+		

The analysis of basic components shows that colour white has a lot of components that are neutral, they describe the colour itself and the things that possess this colour such as people, blood cells, clothes, hair, part of an egg or an eye, wine, and coffee. The negative connotation is revealed only in the situation when the person becomes white because of fear, shock, anger, or illness. The positive connotation comes to fore when the white magic is discussed.

For the further research the idiomatic expressions with colour white were

---

[70] Collins Dictionary. URL : https://www.collinsdictionary.com/dictionary/english-thesaurus/white

collected[71]. See Table 3.

Table 3

Semantic components of colour *white* revealed in idioms

№	Idiom	Semantic component / definition	neutral	positive	negative
1	(as) white as (the) driven snow	too pale / extremely white or pale in colour or complexion.			+
2	white elephant	expensive and useless / an expensive item that is troublesome or useless			+
3	a whited sepulcher	immoral / a person, group, place, or thing presented as being virtuous and morally upright on the outside, but being hypocritically corrupt, immoral, or evil on the inside			+
4	free, white, and twenty-one	free and happy / having the legal freedom to make one's own decisions in life, without being beholden to the influence of anyone else		+	
5	great white hope	hopeful / someone or something expected to succeed or on whom/which certain hopes are based		+	
6	hit the white	correct / to be correct; to be right on target		+	
7	(little) white lie	justified / a lie thought to be insignificant and justified, especially		+	

---

[71] Collins Dictionary. URL : https://idioms.thefreedictionary.com/white

№	Idiom	Semantic component / definition	neutral	positive	negative
		one told to avoid hurting someone's feelings or giving offense			
8	white flag	defeat / A signal of surrender or defeat; a sign that one going to yield or give up.			+
9	white knight	savior / one who saves another person from harm or a difficult situation.		+	
10	white-glove service	respect / treatment or service that is marked or characterized by especial respect, attention, or care.		+	
11	white-collar staff	professionals / professionals whose work responsibilities do not include manual labor		+	
12	white-knuckler	stress / a situation, experience, event, etc., that is marked or characterized by intense fear, anxiety, or stress.			+
13	white as a ghost	too pale / extremely and unnaturally pale, as owing to fear or illness.			+
14	white as a sheet	too pale / extremely and unnaturally pale, as owing to fear or illness.			+
15	white-van man	dangerous driving / someone who drives a nondescript white van for work,			+

| №	Idiom	Semantic component / definition	neutral	positive	negative
		especially one who drives in an aggressive, reckless, or dangerous way.			
16	talk on the big white phone	ill / to vomit into a toilet			+
17	whitewash (something)	to hide / to cover up errors, faults; camouflage			+
18	the men in white coats	doctors / doctors who look after people who are mentally ill			+
19	pretend that black is white	to lie / to say the opposite of what is really true			+
20	white trash	not educated / an offensive way of describing poor white people who are not educated			+
21	white-bread	boring / white-bread people or things are ordinary and boring, and often those that are typical of white, American people			+
22	white feather	cowardly / the sign of cowardice			+
23	white-livered	scared / someone who is scared of almost everything			+

So, white in idioms is predominantly used in negative situations. Most often they describe people when they are cowardly, sick, scared, bored, dishonest and immoral. White becomes the colour of fright as when people are too much afraid they get too white or pale. White is also associated with dangerous driving, false,

stress and even with white people who are badly-educated. On the positive side white becomes the symbol of respect, freedom, hope, happiness, justice and correctness.

So, out of 34 revealed semantic components of colour white, 9 of them were neutral, 8 positive and 24 negative. See Diagram 1.

Diagram 1

Connotations of colour *white* in the English language
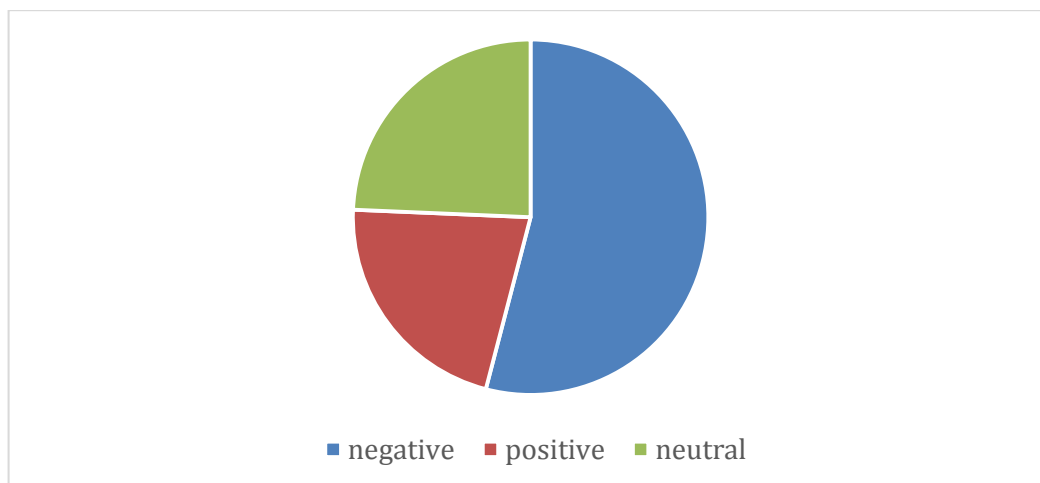
White contains all wavelengths of visible light. It is a blending of all colours of the spectrum, carrying both their negative and positive traits. White perfectly balances all colours, making it neutral and impartial. White symbolizes new beginnings, like a blank notebook page that waits to be written upon. White is associated with the healthcare industry in business to communicate safety and cleanliness. Most hospital medical centers and laboratories have white as their main colour, either in the rooms or uniforms. Though the idiom *the men in white coats* is used derogatory meaning doctors who look after people who are mentally ill.

White is the colour that offers a sense of peace and calmness. It helps us with our inner cleansing. At the same time, it is the absorption of light. It offers the ultimate illumination to those who can't see their path. In keeping with symbolism, the highest-ranking Catholic official, the pope, is the only one who can wear a white cassock.

3.2 Black and its representation in the English language and culture

Black is a colour that results from the absence or complete absorption of visible light. It is an achromatic colour without a hue.

The definition of colour black was studied in the Collins dictionary[72] and it was found out that

1) something that is black is of *the darkest colour* that there is, the colour of the sky at night when there is no light at all;

2) a Black person belongs to a race of *people with dark skins*, especially a race from Africa; Black people are sometimes referred to as Blacks;

3) black coffee or tea has *no milk or cream* added to it;

4) if you describe a situation as black, you are emphasizing that it is *very bad* indeed;

5) if someone is in a black mood, they feel *very miserable and depressed*;

6) you use black to describe things that you consider to be very *cruel or wicked;*

7) *black humour* involves jokes about sad or difficult situations;

8) people who believe in *black magic* believe that it is possible to communicate with evil spirits;

9) if someone blacks another person's *eye,* they punch or hit that person in the eye, causing it to bruise and look black.

The Collins dictionary thesaurus[73] gives the following descriptions of black:

1) in the sense of *dark* (having no hue, owing to the absorption of all or almost all light): "He had thick black hair";

2) in the sense of *gloomy* (without hope): "After the demise of her business, she fell into a black mood";

3) in the sense of *terrible*: "He had just undergone one of the blackest days of his political career";

4) in the sense of *wicked* (wicked or harmful): the blackest laws in the

---

[72] Collins Dictionary. URL: https://www.collinsdictionary.com/dictionary/english/black
[73] Collins Dictionary. URL: https://www.collinsdictionary.com/dictionary/english-thesaurus/black

country's history;

5) in the sense of ***cynical***: a black comedy;

6) in the sense of ***angry***: a black look on your face;

7) in the sense of ***dirty*** (dirty or soiled): "The whole front of him was black with dirt";

8) in the sense of ***bruise:*** "An unfortunate collision had blacked her eye";

9) in the sense of ***boycott:*** (of trade unionists) to organize a boycott of (specified goods, work, etc.)

Having studied the definition and thesaurus of colour black, it can be concluded that in the English language black is used in different situations and most often has negative connotations. See Table 4.

Table 4

Semantic components of colour ***black*** revealed in a dictionary

№	semantic components	neutral	positive	negative
1	dark	+		
2	gloomy			+
3	terrible / very bad			+
4	wicked /cruel			+
5	cynical			+
6	angry			+
7	dirty			+
8	miserable / depressed			+
9	people with dark skins	+		
10	no milk or cream	+		
11	black humour			+
12	black magic			+
13	bruise			+
14	boycott			+

Thus, as it can be seen from the table there are only three semantic components that are neutral and have no evaluation, they describe the colour black

in the sense of dark, people with dark skins and coffee or tea with no milk or cream.   All the rest demonstrate negative associations connected with colour black and describe situations where people become gloomy, wicked, cruel, cynical, angry, miserable, depressed or bruised. They happen to be in terrible situations, organize a boycott or get dirty.

For the further research the idiomatic expressions with colour black were collected[74]. See table 5.

Table 5

Semantic components of colour ***black*** revealed in idioms

№	Idiom	Semantic component / definition	neutral	positive	negative
1	in the black	profitable / making a profit		+	
2	pot calling the kettle black	accusation / is a situation in which one person accuses another of a fault (or faults) that they themselves possess			+
3	blackout	no light / when all the electricity fails and the lights go out.			+
4	blackout drunk	too drunk / the temporary loss of memory caused by a sudden spike in a person's blood alcohol content.			+
5	black and blue	seriously injured / to be badly bruised and discoloured.			+
6	have a black eye	injured / to cause a discoloured dark bruise of the periorbital region			+
7	black belt	achievement in sport / A belt used in		+	

---

[74] Collins Dictionary. URL : https://www.idioms.online

№	Idiom	Semantic component / definition	neutral	positive	negative
		martial arts.			
8	black tie	formal clothing / refers to a formal dress in social events and gatherings		+	
9	blacklist	untrustworthy / refers to a group of people or things that are regarded to be untrustworthy.			+
10	black market	illegal / An illegal business entity that operates in officially controlled goods and services.			+
11	black sheep	disreputable / A member of a group of a family who is disreputable			+
12	blackmail	dishonest / To demand payment or other favors and benefits from people to conceal damaging information about them			+
13	black hat hacker	a thief / a person who steals data from people's computers or does some other cybercrime.			+
14	be in someone's black books	angry / to be angry with someone because they did something bad to you or because they didn't do something they were supposed to do.			+
15	black is white	false / to say or believe			+

| №	Idiom	Semantic component / definition	neutral	positive	negative
		that something false or wrong is true, especially if you can benefit from it.			

The analysis shows that again mostly negative semantic components were revealed, they describe the situations where people are too drunk, injured, angry, dishonest, disreputable, untrustworthy; more than that they can accuse other people, steal their things and have illegal and false actions.

The positive situations where black is used are about profitability, achievement or formal clothing. We may say that black evokes elegance and authority, symbolizes money and a good result in sport.

So, out of 29 revealed semantic components of colour black, 3 of them were neutral, 3 positive and 23 negative. See Diagram 2.

Diagram 2

Connotations of colour *black* in the English language
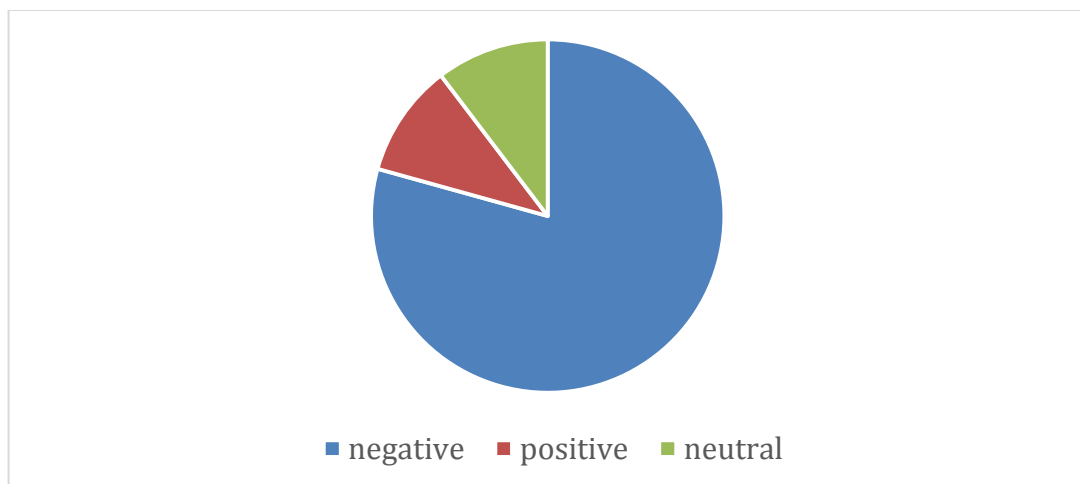
Unfortunately, the colour black is perceived mostly negatively by English people and society and is associated with bad traits of people which are usually condemned and discourage.

3.3 Red and its representation in the English language and culture

Red is the colour at the long wavelength end of the visible spectrum of light,

next to orange and opposite violet. It has a dominant wavelength of approximately 625 to 720 nanometers.

The definition of colour red was studied in the Collins dictionary[75] and it was found out that:

1)   something that is red is ***the colour of blood or fire***;

2)   if you say that someone's face is red, you mean that it is redder than its normal colour, because they are ***embarrassed, angry, or out of breath***;

3)   you describe someone's hair as red when it is ***between red and brown*** in colour;

4)   your red blood cells or red corpuscles are ***the cells in your blood*** which carry oxygen around your body;

5)   you can refer to ***red wine*** as red.

The Collins dictionary thesaurus[76] gives the following descriptions of red:

1) in the sense of ***crimson***: a deep shade of red;

2) in the sense of ***communist*** (a Communist or socialist): "She claimed they were all a bunch of Reds";

3) in the sense of ***red wine***: "The spicy flavours in these dishes call for reds rather than whites";

4) in the sense of ***redness***;

5) in the sense of ***flushed:*** flushed in the face from anger or shame: "She was red with shame";

6) in the sense of ***chestnut*** (reddish in colour or having parts or marks that are reddish): "Her red hair flowed out in the wind";

7) in the sense of ***bloodshot:*** "He rubbed his red eyes";

8) in the sense of ***rosy***: rosy red cheeks;

9) in the sense of ***bloody***.

Having studied the definition and thesaurus of colour red, it can be concluded that in the English language red is used in different situations and most

---

[75] Collins Dictionary. URL: https://www.collinsdictionary.com/dictionary/english/red
[76] Collins Dictionary. URL: https://www.collinsdictionary.com/dictionary/english-thesaurus/red

often is used to characterize the situations connected with different shades of red or things made red. These situations are usually neutral. See Table 6.

Table 6

Semantic components of colour *red* revealed in a dictionary

№	semantic components	neutral	positive	negative
1	different shades of red: the colour of blood or fire / crimson / chestnut / rosy / between red and brown	+		
2	embarrassed, angry, out of breath, ashamed			+
3	the cells in your blood	+		
4	red wine	+		
5	communist	+		
6	redness	+		
7	bloodshot	+		
8	bloody			+

Negative connotations appear when the person's face becomes red because of a number of negative emotions such as embarrassment, anger, shame or due to physical problems like being out of breath.

For the further research the idiomatic expressions with colour red were collected[77]. See Table 7.

Table 7

Semantic components of colour *red* revealed in idioms

№	Idiom	Semantic component / definition	neutral	positive	negative
1	red tape	bureaucracy / bureaucracy that someone has to deal with			+
2	see red	angry / a feeling of anger			+
3	red-faced	embarrassed / a feeling of embarrassment			+
4	in the red	in debt / owning money			+

[77] Collins Dictionary. URL: https://www.idioms.online

№	Idiom	Semantic component / definition	neutral	positive	negative
5	caught red-handed	dishonest / to find someone doing a wrong deed			+
6	red rag to a bull	make someone angry / something that is likely to make someone angry			+
7	red letter day	happy / refers to a day of happiness and good luck because of happy happenings		+	
8	red herring	a distraction from real problems and issues			+
9	red zone	dangerous / any geographical area that is thought to be dangerous or threatening, usually as a consequence of political or military events			+
10	red flag	warning / labeling something as a warning			+
11	to bleed red ink	problems with money / to have serious financial difficulties			+
12	to paint the town red	to have fun / to go out and party all night with your friends		+	
13	red mist	angry / a feeling of great anger			+
14	roll out the red carpet	meet and greet someone formally		+	
15	red-hot	exciting		+	
16	red-blooded	vigorous		+	

As it can be seen from the table most of the idioms with colour red have a negative connotation. They warn people about danger, describe the situations connected with bureaucracy, problems with money, anger, embarrassment. The

positive situations refer to happy days, having fun and something that is solemn and formal.

The symbolism of red can be seen in the many phrases involving the word. The colour of fire in nature, red has become associated with fiery emotional states in people. Passion is conceptualized in the phrase ***red-hot***, meaning very hot, exciting, or passionate, as is anger in the expression ***see red***, meaning lose your temper. The colour of blood and the physical effects of flushing have led to the association of red with health in ***rose-red*** and ***ruddy***; virility in ***red-blooded***; shame in ***red-faced***; and soreness in ***red-rimmed***. Through this combination of meanings, red symbolizes danger and risk in a ***red light*** in traffic. The phrase ***in the red***, meaning `in debt' also has this negative connotation and stems historically from the red ink used to record debits in an account. From the colour of a communist party badge, red means left-wing politics and socialism in the phrase ***red army***.

So, out of 24 revealed semantic components of colour red, 5 of them were neutral, 5 positive and 14 negative. See Diagram 3.

Diagram 3

Connotations of colour ***red*** in the English language
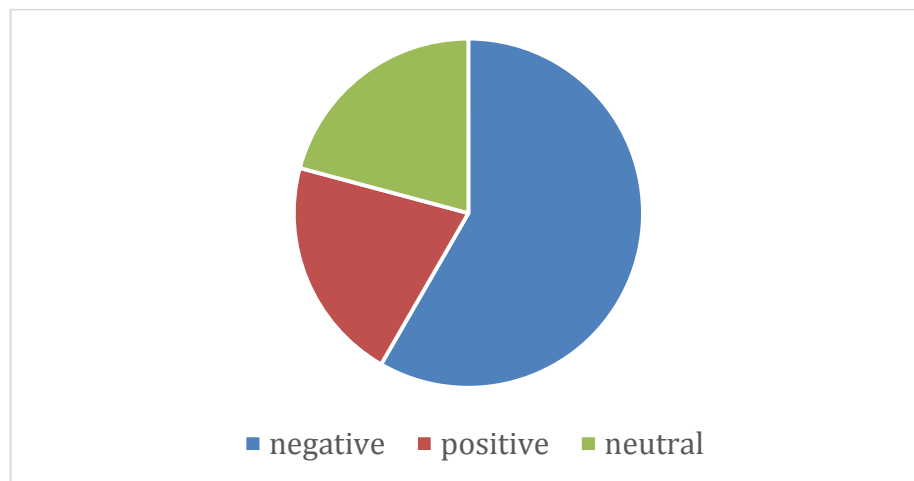
So, the colour red is often associated with various factors, including intense anger, embarrassment, shame, dishonesty, danger. It is often used to demonstrate different shades of red (chestnut, crimson and others), and it is also connected with

happy and funny moments of a person's life as well as with some formal ceremonies.

3.4 Green and its representation in the English language and culture

Green is the colour between blue and yellow in the spectrum. It is grass or any other vegetation**.** We see green the most in our natural surroundings, from lush green landscapes to parks and your garden; the colour green is ubiquitous. Green is grounded in the tangible world, so it isn't colour with many emotional meanings. Green in English is often used to mean jealousy.

The definition of colour green was studied in the Collins dictionary[78] and it was found out that:

1) green is *the colour of grass* or leaves;

2) a place that is green is *covered with grass*, plants, and trees and not with houses or factories;

3) green issues and political movements relate to or are concerned with the *protection of the environment*;

4) if you say that someone or something is green, you mean they *harm the environment as little as possible;*

5) greens are members of *green political movements*.

The Collins dictionary thesaurus[79] gives the following descriptions of green:

1)   in the sense of verdant (covered with grass, plants, or trees): "The city has only thirteen square centimetres of green space for each inhabitant";

2)   in the sense of ecological (concerned with conservation and improvement of the environment);

3)   in the sense of unripe: "Pick and ripen any green fruits in a warm dark place".

4)   in the sense of inexperienced: "He was a young lad, very green and immature";

---

[78] Collins Dictionary. URL : https://www.collinsdictionary.com/dictionary/english/green
[79] Collins Dictionary. URL : https://www.collinsdictionary.com/dictionary/english-thesaurus/yellow

5) in the sense of jealous: "Collectors worldwide will turn green with envy";

6) in the sense of nauseous: "By the end of the race the runners would be green with sickness".

It is quite obvious that green does not have a lot of components. The basic meanings are presented in Table 8.

Table 8

Semantic components of colour *green* revealed in a dictionary

№	semantic components	neutral	positive	negative
1	the colour of grass	+		
2	covered with grass / verdant	+		
3	protection of the environment / ecological / harm the environment as little as possible		+	
4	green political movements		+	
5	unripe	+		
6	inexperienced			+
7	jealous			+
8	nauseous			+

As it can be seen from the basic meaning of the colour green it is used not only to show the colour, but is often associated with nature and its protection. Green nowadays means all the possible things connected with the environment, conservation, political movements aimed at protection and affecting the surrounding the world as little as possible. There are also some negative connotations that reveal people that are usually jealous, inexperienced or nauseous.

For the further research the idiomatic expressions with colour green were collected[80]. See Table 9.

Table 9

Semantic components of colour *green* revealed in idioms

№	Idiom	Semantic component / definition	neutral	positive	negative

---

[80] Collins Dictionary. URL : https://www.idioms.online

№	Idiom	Semantic component / definition	neutral	positive	negative
1	green belt	protected from building / a zone of open country surrounding a city which is protected from urban development.		+	
2	green politics	preserving the environment / those which concentrate on preserving the environment and natural resources.		+	
3	green around the gills	ill / describes someone who looks ill, especially someone who looks nauseated.			+
4	green-eyed monster	jealousy / being jealous			+
5	green with envy	jealousy / being jealous			+
6	green light	permit / permission to proceed with some action or task		+	
7	a hedge between keeps friendship green	respect the privacy / a friendship will do much better when the parties involved respect each other privacy and give them personal space.		+	
8	to go green on someone	upset / to get very upset at someone			+
9	to be green as a gooseberry	inexperienced / be very young and/or inexperienced			+
10	to have a green thumb	able to grow things / used to describe a person who is really successful growing		+	

№	Idiom	Semantic component / definition	neutral	positive	negative
		plants or working in a garden.			
11	greenwash	launder money / to obtain money illegally and then move it through a number of different financial institutions to make it seem like it is legal.			+
12	and the moon is made out of green cheese	unbelievable / an expression used when something hard to believe happened or is going to happen.			+
13	wear the green willow	sad / to wear the green willow means to be sad as a result of losing something.			+
14	to be a little green	ill / young to be ill or to look sick. / to be inexperienced or to lack experience.			+
15	to flourish like a green bay tree	very successful / to thrive		+	
16	the rub of the green	lucky good luck		+	
17	to have green fingers	good gardening skills / used to describe someone who is good at gardening.		+	
18	green shoots	revitalizing / often it is used in connection with the economy		+	
19	long green	money / large amounts of money		+	

These green idioms offer a unique and creative way of expressing various aspects of human experience. They remind us of the beauty and significance of

nature and its role in our lives and provide a powerful tool for communicating complex emotions and ideas. From the positive connotations of growth and renewal to the negative associations of envy and greed, these idioms offer a fascinating insight into the ways in which our language is shaped by our experiences and culture.

So, there are 10 idioms charged positively and they show that people can be successful, lucky, rich (having a lot of money) and green in the sense of protecting nature. Negative connotations are mostly concentrated with being ill, sad, upset, inexperienced, jealous and dishonest.

So, out of 27 revealed semantic components of colour green, 3 of them were neutral, 12 positive and 12 negative. See Diagram 4.

Diagram 4

Connotations of colour *green* in the English language

■ negative ■ positive ■ neautral
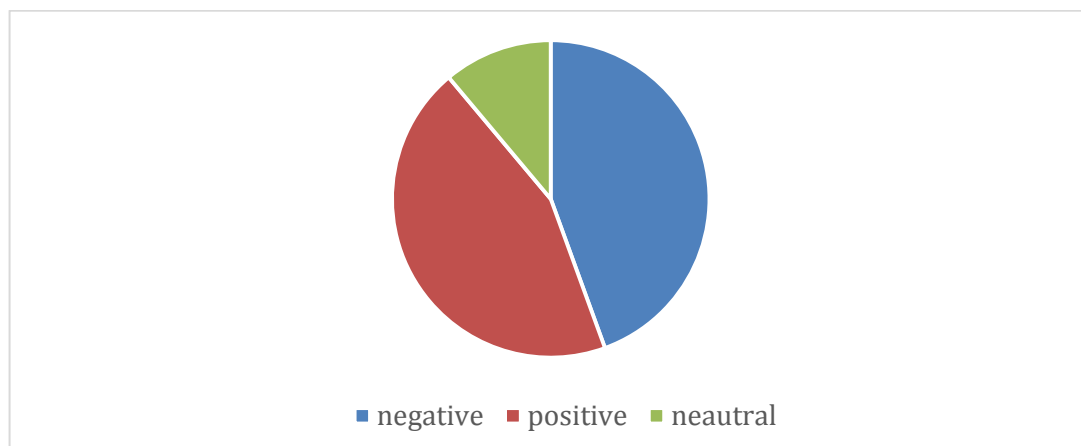
We may conclude that green is the colour of plants and vegetation and many of its extended meanings derive from this. If an area is described as having green spaces, it has parkland, gardens, fields and the like. Similarly, green belt is a zone of open country surrounding a city which is protected from urban development. Green politics are those which concentrate on preserving the environment and natural resources. Green is also the colour of unripe fruit and plants, which has led to the meanings of youth, lack of maturity, and lack of experience. When applied to human physiology, green is the colour of biliousness and sickness as in the phrase green around the gills. Jealousy was formerly linked with the colour yellow,

but now is expressed in various phrases with green, such as Shakespeare's green-eyed monster (jealousy) and green with envy. One modern metaphorical meaning of green is in traffic signalling, where a green light means go. The verb greenlight, meaning to authorize or permit something to proceed, shows a recent extension of this sense.

Green represents balance and rebirth. It's the symbol of prosperity and progress. The Green Party in the US is inextricably tied to ecological and progressive causes, and a greenback is another term for the paper currency. Green is the colour of money, prosperity, and growth. Dark green is often associated with wealth and masculinity. This colour is used in medical facilities because it has a cooling and calm effect on patients.

Green colour has strong emotional correspondence with safety. It evokes feelings of abundance while providing a restful and secure feeling. That's because when you see something green, you know it is alive and growing. The presence of green indicates not only life but also water; therefore, little danger of famine, reassuring us on a primitive level. For instance, green is used in websites and apps in the modern world to indicate a transaction or action went well, again reassuring us. In terms of prosperity and abundance, green is also associated with Wall Street, ambition, practicality, banking, finances, and money. Still, just like everything else, colours also have their duality. When overused, green can cause people to become lazy, moody, depressed, placid, and lethargic.

3.5 Yellow and its representation in the English language and culture

Yellow is any of a group of colours that vary in saturation but have the same hue. They lie in the approximate wavelength range 585–575 nanometres. Yellow is known to be one of the happiest colours of the spectrum. It gives a sense of innocence, and in most cases, it is associated with children. The colour of sunshine, yellow, brings positive feelings such as happiness, joy, and hope.

The definition of colour yellow was studied in the Collins dictionary[81] and it

---

[81] Collins Dictionary. URL : https://www.collinsdictionary.com/dictionary/english-thesaurus/yellow

was found out that:

1) something that is yellow is ***the colour of lemons***, butter, or the middle part of an egg;

2) if something yellows, it ***becomes yellow*** in colour, often because it is old;

3) cowardly or afraid;

4) ***offensively sensational***, as a cheap newspaper.

The Collins dictionary thesaurus[82] gives the following descriptions of yellow:

1) in the ***sense of lemon***: "The walls have been painted bright yellow".

2) in the ***sense of cowardly***: "You yellow dogs!"

It is evident that yellow does not have a lot of components. The basic meanings are presented in Table 10.

Table 10

Semantic components of colour ***yellow*** revealed in a dictionary

№	semantic components	neutral	positive	negative
1	the colour of lemons	+		
2	becomes yellow	+		
3	cowardly or afraid;			+
4	offensively sensational			+

It is clear that the main meaning of colour is neutral, whereas two other ones have a negative connotation and describe cowardly people or something that is offensively sensational.

In general, it is believed that yellow is a colour which is often associated with the sun, warmth, and positivity. Conversely, there are a number of negative connotations associated with this colour to do with ageing, sickness, jealousy, cowardice, and betrayal. Paper yellows with age and plants turn yellow when they are diseased. Some illnesses, such as jaundice, cause yellowing in the skin. Formerly, jealousy was associated with yellow, because of the meaning `jaundiced, biased in view', though this symbolism has now transferred to the colour green.

---

[82]Collins Dictionary. URL : https://www.collinsdictionary.com/dictionary/english-thesaurus/yellow

The most common modern figurative meaning is that of cowardice. The slang term yellow-belly was used in the US from the early 20th century to mean cowardly, thought to be derived from the yellow underside of some animals and birds. Yellow has also been the colour of betrayal in Christian religious symbolism, with Judas portrayed by painters over the ages wearing a yellow cloak.

Yellow is often used as an accent colour to get people's attention to something important or when needed to create excitement. As such, yellow is mostly used in:

1. Road maintenance equipment

2. School buses and taxicabs

3. Warning signs

3. Toys

4. Food industry

5. Products associated with speed, fun, and low cost

Yellow is used to promote items related to leisure, children's products, food, transportation, and travel.

For the further research the idiomatic expressions with colour yellow were collected[83]. See Table 11.

Table 11

Semantic components of colour *yellow* revealed in idioms

№	Idiom	Semantic component / definition	neutral	positive	negative
1	yellow-dog contract	deceit / a contract with an employer, now illegal, in which an employee agreed not to join a trade union during his or her employment			+
2	yellow journalism	sensation / the type of journalism that			+

[83] Collins Dictionary. URL : https://www.idioms.online

		relies on sensationalism and lurid exaggeration to attract readers			
3	yellow streak	cowardly / a cowardly or weak trait, characteristic, or flaw in a person's nature			+
4	yellow brick road	success / a path believed to lead to success or adventure.		+	
5	yellow-belly	cowardly / a spineless, cowardly person.			+
6	wear yellow stockings	jealousy to be jealous			+

As it is clear from the table there are not many idioms with the colour yellow. Moreover, it is mostly used negatively and reveals such traits of personality as jealousy and cowardness, the tendency to make a sensation or to deceive somebody. The only positive meaning has an idiom *yellow brick road.* To proceed along some path or course of action believed to lead to success or adventure. A reference to the path of the same name in the fictional land of Oz, popularized by the film "The Wizard of Oz", based on the works of L. Frank Baum.

So, out of 10 revealed semantic components of colour yellow, 2 of them were neutral, 1 positive and 7 negative. See Diagram 5.

Diagram 5

Connotations of colour *yellow* in the English language

■ negative   ■ positive   ■ neutral
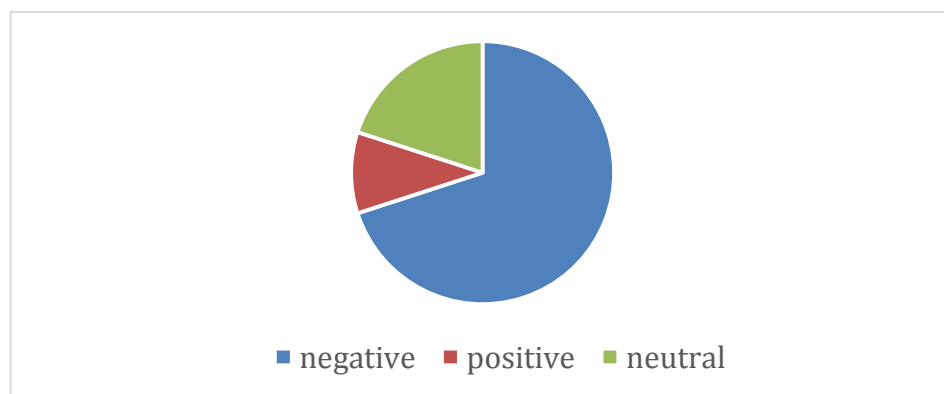
So, if in general the colour yellow is commonly associated with happiness and joy and is a symbol of optimism, if in the idioms it is used mostly in negative contexts.

3.6 Blue and its representation in the English language and culture

Blue is a colour that is more often found in nature, such as the pale blue that is observed in the sky during the day or the dark blue of a deep pool of water. For this reason, perhaps, people often describe the colour blue as serene. Yet as a cool colour, blue can sometimes seem icy, distant, or even cold.

The definition of colour blue was studied in the Collins dictionary[84] and it was found out that:

1) something that is blue is *the colour of the sky* on a sunny day;

2) *the blues* is a *type of music* which was developed by African American musicians in the southern United States. It is characterized by a slow tempo and a strong rhythm;

3) if you have got the blues, you *feel sad and depressed*;

4) if you are feeling blue, you are *feeling sad or depressed*, often when *there is no particular reason*;

5) a Cambridge blue or an Oxford blue is a man or woman who has *played* for Cambridge or Oxford University *in a particular sport*;

6) blue films, stories, or jokes are about *intimate relations*;

7) a police officer (slang);

The Collins dictionary thesaurus[85] gives the following descriptions of blue:

1) in the sense of *depressed* (depressed or unhappy): "There's no earthly reason for me to feel so blue";

2) in the sense of *smutty* (pornographic): blue movies.

All the basic meanings are presented in Table 12.

---

[84] Collins Dictionary. URL : https://www.collinsdictionary.com/dictionary/english/blue
[85] Collins Dictionary. URL : https://www.collinsdictionary.com/dictionary/english-thesaurus/blue

Table 12

Semantic components of colour *blue* revealed in a dictionary

№	semantic components	neutral	positive	negative
1	the colour of the sky	+		
2	type of music	+		
3	feel sad and depressed			+
4	play for Cambridge or Oxford University in a particular sport	+		
5	smutty			+
6	a police officer	+		

It is clear that colour blue does not have a lot of semantic components. It describes the colour similar to the one the sky has on a sunny day, it can be a type of music or a member of the sport club in Cambridge or Oxford. There are two negative senses describing someone feeling sad or depressed and something that is smutty, especially when it concerns films, stories or jokes about intimate relations.

For the further research the idiomatic expressions with colour blue were collected[86]. See Table 13.

Table 13

Semantic components of colour *blue* revealed in idioms

№	Idiom	Semantic component / definition	neutral	positive	negative
1	out of the blue	unexpected event / to happen unexpectedly			+
2	once in a blue moon	very rarely / not often			+
3	burn with a low blue flame	angry / drunk 1) to feel intense anger, typically without expressing it; 2) to be too drunk			+
4	a bolt from the blue	sudden and unwelcome / a sudden, unexpected, and usually unwelcome			+

---

[86] Collins Dictionary. URL : https://idioms.thefreedictionary.com/white

| №	Idiom	Semantic component / definition	neutral	positive	negative
		event			
5	scream blue murder	fussy / you are emphasizing that they are making a lot of noise or fuss about something that they do not like.			+
6	into the blue	unknown / into the unknown or the far distance			+
7	blue-eyed boy	likeable, but by only by a small group of people / often a derogatory term used to describe a man who is respected and treated especially well by an authority figure.			+
8	be in a blue funk	sad / to feel sad or unhappy for a lengthy period of time.			+
9	blue chip	respectable / shares of stock for a large, respectable company (which would be considered a low risk to invest in).		+	
10	blue falcon	traitor / someone who betrays or otherwise causes problems for their friends or comrades.			+
11	be blue in the face	exhausted / to show signs of exhaustion or strain from lengthy or repetitive speech			+
12	blue-sky thinking	creative / when people try to find completely		+	

№	Idiom	Semantic component / definition	neutral	positive	negative
		new ideas.			
13	run around like a blue-arsed fly	too busy / to work quickly and with much activity while trying to accomplish a large number of tasks, perhaps simultaneously.			+
14	turn the air blue	to use vulgar language / To use profane language, especially with great rapidity and intensity.			+
15	caught between the devil and the deep blue sea	difficult choice / faced with two undesirable choices or situations			+
16	blue ribbon	a prize for first place. In contests, the person or thing that wins first place is often awarded a blue ribbon.		+	
17	blue devils	depressed / a period of depression, melancholy, or despondence			+
18	have a blue fit	angry / to become extremely angry			+
19	blued, screwed, and tattooed	hopeless / having no chance of success or recovery; in a hopeless or unsalvageable position or situation.			+
20	blue Monday	depressed / a Monday in which one experiences a depressed mood due to returning to work after the weekend.			+

It is quite evident that colour blue is mostly used in negative situations. They describe people who are sad and depressed, angry and drunk, exhausted and fussy, hopeless or too busy. Blue is used to reveal the situations that are unexpected or happen very seldom, can be sudden and unwelcome, unknown and difficult to choose from. The idioms with positive connotations take place in the situations when people are awarded prizes or if a company is so respectable that it can bring profit to other people. Moreover, this colour is used to describe creativity in people through the idiom blue-sky thinking.

So, out of 26 revealed semantic components of colour blue, 4 of them were neutral, 3 positive and 19 negative. See Diagram 6.

Diagram 6

Connotations of colour *blue* in the English language

- negative   - positive   - neutral
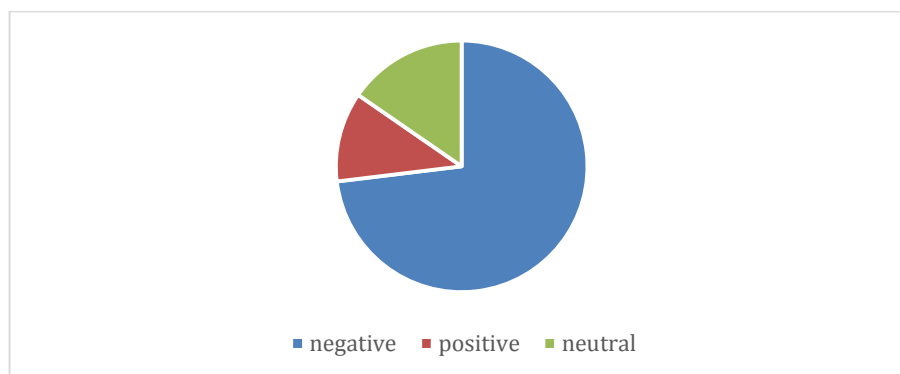
So, blue has developed many figurative meanings in English. The colour of the sky in nature, blue has come to symbolize constancy and lack of change, leading to the phrase *true-blue*, meaning staunch, as applied to members of the Scottish Whig party in the 17th century and now applied to British Conservatives. Blue denotes right-wing in Britain, from the choice of this colour to represent the Conservative party. It refers to the aristocracy in the phrase *blue-blood*, but to manual workers in the phrase *blue-collar*. Blue-collar stems from the dress codes of these industries, where traditionally shirts had to be made of a durable material and non-staining colour. Though its origins are not certain, blue has become associated with pornography, as in the phrase blue movies. This may derive from so-called `blue laws' which promoted morality in the 18th century United States by

restricting activities such as drinking and gaming. Blue is also related to depression and low spirits, especially appearing in the plural form the blues. This is also the name of a style of melancholy music.

Blue is one of the most well-known colours but also one of the least appetizing. Some weight plans recommend eating your food off a blue plate. It is because blue rarely occurs naturally in food. People are geared to avoid foods that are poisonous and blue colouring in food is often a sign of wastage or poison.

Anyway, blue is mostly associated with calmness. Where calmness is present, the blue colour is present too. But it can be used to describe depression without any reason, i.e., the reason it is considered a symbol of melancholy. Therefore, the symbolic function of this colour continues to raise a lot of psychological issues as some researchers believe that it is a cold colour, especially after death, while other artists, including Shakespeare, have used it as a colour of the truth. In the English society, the colour blue is used to symbolize the sea and the sky hence depicting vastness and depth. Though these attributes are promising, blue is also cowardly and fragile. These different qualities make blue to be a perfectly balanced shade that so many trust, love, and adore.

Having analyzed 6 basic colours through their dictionary definitions and their representation in idioms, we may make the following conclusions.

The most negatively perceived colour in the English language and culture is black (80% of negative connotations); then comes blue (73%), yellow (%), red (60%), white (58%) and green (44%).

The most positively perceived colour is green (44% of positive connotations), then comes white (23%), red (20%), blue (12%), yellow (10%) and black (10%).

In general, there are more definitions and idioms with negative semantic components than with positive ones. It seems that colours are used to reveal the negative traits of people, their vices and problems, as well as various negative situations that they can get into.

Colour black is used in the sense of dark, to describe people with dark skins and coffee or tea with no milk or cream. Negative associations connected with colour black revealed in the dictionary describe situations where people become gloomy, wicked, cruel, cynical, angry, miserable, depressed or bruised. They happen to be in terrible situations, organize a boycott or get dirty. In idioms colour black also predominantly has negative semantic components which describe the situations where people are too drunk, injured, angry, dishonest, disreputable, untrustworthy; more than that in idioms with black people can accuse others, steal their things and have illegal and false actions. The positive situations where black is presented are about profitability, achievement or formal clothing. Also, black evokes elegance and authority, symbolizes money and a good result in sport.

Red is the colour of blood or fire and is often used to characterize the situations connected with different shades of red or things made red. Negative connotations appear when the person's face becomes red because of a number of negative emotions such as embarrassment, anger, shame or due to physical problems like being out of breath. In idioms colour red is often associated with various factors, including intense anger, embarrassment, shame and dishonesty. It warns people about danger, describes the situations connected with bureaucracy and problems with money. On the other hand, it is also connected with happy and funny moments of a person's life as well as with some formal ceremonies.

Yellow is a colour which is often associated with the sun, warmth, and positivity. Conversely, there are a number of negative connotations associated with this colour to do with ageing, sickness, jealousy, cowardice, and betrayal, tendency to make a sensation or to deceive somebody. The only positive meaning has an idiom *yellow brick road.* To proceed along some path or course of action believed to lead to success or adventure. In general, yellow is the colour which is not represented a lot in the idiomatic picture of the world.

Green is used not only to show the colour, but is often associated with nature and its protection. Green nowadays means all the possible things connected with

the environment, conservation, political movements aimed at protection and affecting the surrounding the world as little as possible. There are also some negative connotations that reveal people that are usually jealous, inexperienced or nauseous. In idioms green is used to show that people can be successful, lucky, rich (having a lot of money) and green in the sense of protecting nature. Negative connotations are mostly concentrated with being ill, sad, upset, inexperienced, jealous and dishonest. Green is the most positive colour out of the 6, as it has the biggest number of positive connotations.

Colour white has a lot of components that are neutral, they describe the colour itself and the things that possess this colour such as people, blood cells, clothes, hair, part of an egg or an eye, wine, and coffee. The negative connotation is revealed only in the situation when the person becomes white because of fear, shock, anger, or illness. The positive connotation comes to fore when the white magic is discussed. White in idioms is predominantly used in negative situations. Most often they describe people when they are cowardly, sick, scared, bored, dishonest and immoral. White becomes the colour of fright as when people are too much afraid, they get too white or pale. White is also associated with dangerous driving, false things, stress and even with white people who are badly-educated. On the positive side white becomes the symbol of respect, freedom, hope, happiness, justice and correctness.

Colour blue does not have a lot of semantic components in the dictionary. It describes the colour similar to the one the sky has on a sunny day, it can be a type of music or a member of the sport club in Cambridge or Oxford. There are two negative senses describing someone feeling sad or depressed and something that is smutty, especially when it concerns films, stories or jokes about intimate relations. In idioms though colour blue is represented a lot, but mostly used in negative situations. They describe people who are sad and depressed, angry and drunk, exhausted and fussy, hopeless or too busy. Blue is used to reveal the situations that are unexpected or happen very seldom, can be sudden and unwelcome, unknown

and difficult to choose from. The idioms with positive connotations take place in the situations when people are awarded prizes or if a company is so respectable that it can bring profit to other people. Moreover, this colour is sometimes used to describe creativity in people and their unusual thinking.

CONCLUSION

Colour remains important and more meaningful than a mere adjective due to its manifestation in emotions, objects, signs, and symbols. It provides different connotations and depths, considering that they hint and give the illusion of choices, events, or activities. In the English language, colour is significant as it can ensure that we interact and effectively communicate various issues that otherwise would not be expressed efficiently without mentioning them.

The studies about colour started long ago in ancient Greece, were scientifically developed after Newton researched colour, and were further observed in the works of Goethe, Heisenberg, Gladstone, and other scientists. This proves that the idea of colour is important not only for physics, but linguistics, anthropology, ethnology, and cognitive psychology as well.

The main idea of Sapir and Whorf and their theory of "linguistic relativity" is that culture affects thinking through language and the difference in language types determines the difference in the way people perceive the world. Each language gives its users a unique semantic structure and codifies colour perception experiences in its own unique way.

Berlin and Kay's theory of the basic colour words systematically summarize the development patterns of basic colour words in human language. The colour theory is significant in ensuring an understanding of the significant variation and diversity of colour term systems across different cultures. As evident in the six stages of colour terms development, there is a need to acknowledge that each colour term may differ from one culture to another and the language communities. A combination of biological, cultural, and perceptual influences has contributed to diversity and variation in the understanding of colour terms as used in various linguistic communities globally. Therefore, Berlin and Kay's work on colour should be embraced and appreciated as they contribute to understanding our environment, community, and society.

There are many different opinions about colour and colour theories. Nowadays, people's research on colour is multi-field crossing and has achieved rich results. However, both in the past and now, the research on colour is accumulated in people's daily life and whatever the theory is, it has its grounds and makes the general understanding of colour more profound.

There are a lot of different colour naming systems, such as the natural colour naming system, the Pantone Matching Systems, the RGB colour model, the HSL and HSV colour models and others. The most important conclusion is the one made by Zaslavsky about the fact that cultural factors, such as social interactions and environmental influences, shape the structure and organization of colour naming systems.

Colour words and their categories are crucial in helping us communicate and shape our perception of the vast spectrum of colours. The expanded variety of colours through the use of various descriptors, including tint, shade, and tone, are valuable in various fields, including fashion and interior decoration, where precise colours are required to achieve the desired objective. Therefore, there is a need to appreciate and embrace the various possibilities in the colour spectrum as they allow us to have a diverse range of colours that facilitate effective communication and foster a deep connection with the visual world.

If a language should only have three basic colour terms in its vocabulary, those will be white, black and red. If there are four, it will be white, black, red and green (or yellow), and so forth. English is stage VII languages, and shows pattern 22 in its vocabulary: white – black – red – green – yellow – blue – brown – pink – purple – orange – grey.

In this study only first six basic colours are studied. They are considered to be the most frequent and representative ones, so they have become the subject of the research.

Cultural influence on colour perception is referred to as how cultural factors shape and influence how individuals perceive, categorize, and name colours.

Although a universal physiological basis exists for colour perception, cultural norms, languages, and social context can also affect how colours are perceived and interpreted. Cultural factors play a significant role in determining which colours are important or salient in a particular society. Cultural upbringing and socialization play a role in shaping colour perception.

The most negatively perceived colour in the English language and culture is black (80% of negative connotations); then comes blue (73%), yellow (70%), red (60%), white (58%) and green (44%).

The most positively perceived colour is green (44% of positive connotations), then comes white (23%), red (20%), blue (12%), yellow (10%) and black (10%).

The colour black has the biggest number of negative semantic components in its semantic structure (80%) and the smallest number of positive semantic components (10%). This is the only colour that has 11 negative semantic components fixed in the definition (compared with 1 in white, 2 in red, 3 in green, 2 in yellow, 2 in blue). Colour black is used in the sense of dark, to describe people with dark skins and coffee or tea with no milk or cream. Negative associations connected with colour black revealed in the dictionary describe situations where people become gloomy, wicked, cruel, cynical, angry, miserable, depressed or bruised. They happen to be in terrible situations, organize a boycott or get dirty. In idioms colour black also predominantly has negative semantic components which describe the situations where people are too drunk, injured, angry, dishonest, disreputable, untrustworthy; more than that in idioms with black people they can accuse others, steal their things and have illegal and false actions. The positive situations where black is presented are about profitability, achievement or formal clothing. Also, black evokes elegance and authority, symbolizes money and a good result in sport.

The colour green has the biggest number of positive semantic components (44%) and the smallest number of negative semantic components (44%) in its

semantic structure. This is the only colour that has 2 positive semantic components fixed in the definition (compared with 0 in blue, yellow, red, black and 1 in white). It was found out that green is used not only to show the colour, but is often associated with nature and its protection. Green nowadays means all the possible things connected with the environment, conservation, political movements aimed at protection and affecting the surrounding the world as little as possible. There are also some negative connotations that reveal people that are usually jealous, inexperienced or nauseous. In idioms green is used to show that people can be successful, lucky, rich (having a lot of money) and green in the sense of protecting nature. Negative connotations are mostly concentrated with being ill, sad, upset, inexperienced, jealous and dishonest.

Blue describes the colour similar to the one the sky has on a sunny day, it can be a type of music or a member of the sport club in Cambridge or Oxford. But blue is the second colour which has the biggest number of negative semantic components (73%), though only 2 of them are fixed in the dictionary. Most of them are presented in the idioms and describe people who are sad and depressed, angry and drunk, exhausted and fussy, hopeless or too busy. Blue is used to reveal the situations that are unexpected or happen very seldom, can be sudden and unwelcome, unknown and difficult to choose from. The idioms with positive connotations take place in the situations when people are awarded prizes or if a company is so respectable that it can bring profit to other people. Moreover, this colour is sometimes used to describe creativity in people and their unusual thinking.

White is the second colour that has the biggest number of positive semantic components (23%) and has the biggest number of components that are neutral (26%). They describe the colour itself and the things that possess this colour such as people, blood cells, clothes, hair, part of an egg or an eye, wine, and coffee. On the positive side white becomes the symbol of respect, freedom, hope, happiness, justice and correctness. White in idioms is predominantly used in negative

situations. Most often they describe people when they are cowardly, sick, scared, bored, dishonest and immoral. White becomes the colour of fright as when people are too much afraid, they get too white or pale. White is also associated with dangerous driving, false things, stress and even with white people who are badly-educated.

Red is the third in the rating of positive semantic components (20%) and the fourth in the rating of negative semantic components (60%). Red is the colour of blood or fire and is often used to characterize the situations connected with different shades of red or things made red. Negative connotations appear when the person's face becomes red because of a number of negative emotions such as embarrassment, anger, shame or due to physical problems like being out of breath. In idioms colour red is often associated with various factors, including intense anger, embarrassment, shame and dishonesty. It warns people about danger, describes the situations connected with bureaucracy and problems with money. On the other hand, it is also connected with happy and funny moments of a person's life as well as with some formal ceremonies.

Yellow is the only colour that has the least number of semantic components and (only 10) only one positive. Yellow is a colour which is often associated with the sun, warmth, and positivity. Conversely, there are a number of negative connotations associated with this colour to do with ageing, sickness, jealousy, cowardice, and betrayal, tendency to make a sensation or to deceive somebody. The only positive meaning is about proceeding along some path or course of action believed to lead to success or adventure.

In general, there are more definitions and idioms with negative semantic components than with positive ones. It seems that colours are used to reveal the negative traits of people, their vices and problems, as well as various negative situations that they can get into.

LIST OF REFERENCES

LITERATURE

1 Aaker, J. L., Benet-Martinez, V., Berrocal, J. Consumption symbols as carriers of culture: a study of Japanese and Spanish brand personality constructs / J. L. Aaker, V. Benet-Martinez, J. Berrocal // Journal of Personality and Social Psychology. – 2001. – 492 p.

2 Adelson, R. Hues and Views / R. Adelson. – 2005. – Pp. 26-36. – URL: https://www.apa.org/monitor/feb05/hues (retrieved 25.05.2023).

3 Alotaibi, W.J. Colour idioms in English and Arabic: Their meaning and colour associations / W.J. Alotaibi // European Journal of English Language Teaching. – 2020. – Pp. 26-30.

4 Alnasuan A. Colour psychology / A. Alnasuan // Am Res J Human Soc Sci. – 2016. – P.1-6.

5 Athanasopoulos, P., Emanuel B. Does Grammatical Aspect Affect Motion Event Cognition? A Cross-Linguistic Comparison of English and Swedish Speakers / P. Athanasopoulos, B. Emanuel // Cognitive Science. – 2013. – Pp. 286–309. – URL: https://doi.org/10.1111/ cogs.12006 (retrieved 25.05.2023).

6 Avavibool N. The effects of colour in work environment: A systematic review / N. Avavibool, B. Gatersleben, C. Moorapun // Asian J Behav Stud. – 2018. – P. 149-160.

7 Babin, B. J., Hardesty, D. M., Suter, T. A. Colour and shopping intentions: the intervening effect of price fairness and perceived affect / B. J. Babin, D. M. Hardesty, T. A. Suter // Journal of Business Research. – 2003. – P.541-551.

8 Battleday, R. M., Peterson, J. C., Griffiths, T. L. Capturing human categorization of natural images by combining deep networks and cognitive models / R. M. Battleday, J. C. Peterson, T. L. Griffiths // Nature communications, 11 (1). – 2020. – P. 5418.

9 Berlin, B., Kay, P. Basic Colour Terms: Their Universality and Evolution. Berkeley & Los Angeles University of California Press / B. Berlin, P. Kay. – Scientific Research Publishing. – 1991. – URL : https://www.scirp.org/(S(vtj3fa45qm1ean45vvffcz55))/reference/References Papers .aspx?ReferenceID=1331178 (retrieved 25.05.2022).

10 Bleys, J., Martin L., Michael S., Luc S. The Grounded Colour Naming Game / J. Bleys, L. Martin, S. Michael, S. Luc // ResearchGate. – 2009, January. – URL : https://www.researchgate. net/publication/255620297_The_Grounded_ Colour_Naming_Game (retrieved 25.05.2023).

11 Bohnemeyer, J. Linguistic Relativity / J. Bohnemeyer // The Wiley Blackwell companion to semantics. – 2020. – P.1-33.

12 Bornstein, M. H. Colour Vision and Colour Naming: A Psychophysiological Hypothesis of Cultural Difference / M. H. Bornstein // Psychological Bulletin 80 (4). – 1973. – P. 257. URL: https://doi.org/10.1037/h0034837 (retrieved 25.05.2023).

13 Boster, J. S. Categories and cognitive anthropology / J. S. Boster // In Handbook of categorization in cognitive science. Elsevier, 2005. – Pp.75-106.

14 Bradfield, S. The Diversity of Colour: An Analysis of Cross-Cultural Colour Symbolism / S. Bradfield // Digital Commons @ Andrews University. – 2014. – Pp. 18-25.

15 Brill, M. H. Colour Appearance Models / M. H. Brill // Colour Research and Application. – 1998. – 23 (4). – Pp.248-250.

16 Chaabouni, R., Eugene K., Emmanuel, D. M. Communicating Artificial Neural Networks Develop Efficient Colour-Naming Systems / R. Chaabouni, K. Eugene, D. M. Emmanuel // Proceedings of the National Academy of Sciences of the United States of America 118 (12). – 2021. – URL: https://doi.org/10.1073/pnas.2016569118 (retrieved 25.05.2023).

17 Chen, H., Zhang, X. Comparative Study on the Cultural Connotations of "Red" in English and Chinese / H. Chen, X. Zhang // Cross Current Int J Peer

Reviewed J Human Soc Sci. – 2021. – 7(4). – Pp.73-75.

18 Chen, R. Cultural Differences and Translation of Chinese and English Colour Words / R. Chen // Review of Educational Theory/ – 2021. – 4 (1). – P.1–6.

19 Chomsky, N. Powers and prospects: Reflections on nature and the social order / N. Chomsky. – Haymarket Books+ ORM, 2015. – 250 p.

20 Collier, G. A., Brent, B., and Paul, K. Basic Colour Terms: Their Universality and Evolution / G. A. Collier, B. Brent, K. Paul // Language. – 1973. 49 (1). – P. 245. – URL: https://doi.org/10.2307/412128 (retrieved 25.05.2023).

21 Conway, B. R., Ratnasingam, S., Jara-Ettinger, J., Futrell, R., Gibson, E. Communication efficiency of colour naming across languages provides a new framework for the evolution of colour terms / B. R. Conway, S. Ratnasingam, J. Jara-Ettinger, R. Futrell, E. Gibson // Cognition. – 2020. – # 195. – P.104086.

22 Cruse, D. A. Prototype theory and lexical semantics / D. A. Cruse // In Meanings and Prototypes (RLE Linguistics B: Grammar). – Routledge, 2014. – P. 392-412.

23 De Bortoli, M., Maroto, J. Colours across cultures: Translating colours in interactive marketing communications / M. De Bortoli, J. Maroto // European Languages and the Implementation of Communication and Information Technologies. – 2021. – Pp.1-27.

24 Dedrick, D. Colour classification in natural languages / D. Dedrick // KO KNOWLEDGE ORGANIZATION. – 2022. – 48(7-8). – Pp.563-579.

25 Dunn, A. The meaning of colour: The cultural and ethnic aspects of colour use / A. Dunn. – 2014. – URL : ///E:/20162017/colourHTML/Alison% 20D unn% 20The% 20meaning% 20of% 20colour. htm (retrieved 25.05.2023).

26 Fasold, R. W., Connor-Linto, J. An introduction to language and linguistics / R. W. Fasold, J. Connor-Linto. – Cambridge University Press, 2014. – 278 p.

27 Finlay J, Franke T, McKay H, Sims-Gould J. Therapeutic landscapes and wellbeing in later life: Impacts of blue and green spaces for older adults / J. Finlay, T. Franke, H. McKay, J. Sims-Gould // Health & Place, 34. – 2015. – Pp.97-106.

28 Gage, J. What meaning had colour in early societies? / J. Gage // Cambridge Archaeological Journal, 9 (1). – 1999. – Pp.109-126.

29 Gao, X. P., Xin, J. H., Sato, T., Hansuebsai, A., Scalzo, M., Kajiwara, K., Billger, M. Analysis of cross- cultural colour emotion / X. P. Gao, J. H. Xin, T. Sato, A. Hansuebsai, M. Scalzo, K. Kajiwara, M. Billger // Colour Research & Application: Endorsed by Inter- Society Colour Council, The Colour Group (Great Britain), Canadian Society for Colour, Colour Science Association of Japan, Dutch Society for the Study of Colour, The Swedish Colour Centre Foundation, Colour Society of Australia, Centre Français de la Couleur, 32 (3). – 2007. – Pp. 223-229.

30 Gibson, E., Futrell, R., Jara-Ettinger, J., Mahowald, K., Bergen, L., Ratnasingam, S. Colour naming across languages reflects colour use / E. Gibson, R. Futrell, J. Jara-Ettinger, K. Mahowald, L. Bergen, S. Ratnasingam // Proceedings of the National Academy of Sciences, 114 (40). – 2017. – Pp.10785-10790.

31 Hardin, C. L. Berlin and Kay theory / C. L. Hardin // Encyclopedia of colour science and technology, 2. – 2013. – 267 p.

32 Hasanova, S. The linguo-cultural aspect of the interrelation of language and culture / S. Hasanova // International Journal of English linguistics, 4 (6). – 2014. – 160 p.

33 He, G. English and Chinese cultural connotations of colour words in comparison / G. He // Asian Social Science, 5 (7). – 2009. – Pp.160-163.

34 He, H., Li, J., Xiao, Q., Jiang, S., Yang, Y., Zhi, S. Language and colour perception: Evidence from Mongolian and Chinese speakers / H. He, J. Li, Q. Xiao, S. Jiang, Y. Yang, S. Zhi // Frontiers in psychology, 10. – 2019. – 551 p.

35 Hickerson, N. P. Basic colour terms: their universality and evolution / N. P. Hickerson. – 1971. – Pp.257-270.

36 Hong, Z. GUY DEUTSCHER, Through the language glass: Why the world looks different in other languages / Z. Hong. – Language in Society, 41(1). – 2012. – Pp.152-153.

37 Hymes, D. Two types of linguistic relativity (with examples from Amerindian ethnography) / D. Hymes // In Sociolinguistics. – De Gruyter Mouton, 2015. – P. 114-167.

38 Isenberg, N. White trash: The 400-year untold history of class in America / N. Isenberg. – Penguin, 2017. – 286 p.

39 Jiang, G. A. Reinterpretation of Linguistic Relativity : From the perspective of linguistics / G. A. Jiang // BoD–Books on Demand. – 2020. – URL: https://books.google.co.ke/books?hl=en&lr=&id=rJAMEAAAQBAJ&oi =fnd&pg=PA9&dq=Jiang (retrieved 25.05.2023).

40 Jonauskaite, D. Most and least preferred colours differ according to object context: new insights from an unrestricted colour range. PloS one / D. Jonauskaite, C. Mohr, J. P. Antonietti, P. M. Spiers, B. Althaus, 11(3). – 2016. – Pp. 286.

41 Kaplan, J. R. Colour terminology, sensory stimuli, and the semantics of the questionnaire / J. R. Kaplan // Intellectual History Review, 32(3). – 2022. – P. 575-598.

42 Kareem, N. O. Colour-related Idiomatic Expressions in English and Kurdish / N. O. Kareem // Koya University Journal of Humanities and Social Sciences, 2(1). – 2019. – P. 131-149.

43 Kazemzadeh, S. Referitgame: Referring to objects in photographs of natural scenes / S. Kazemzadeh, V. Ordonez, M. Matten, T. Berg // In Proceedings of the 2014 conference on empirical methods in natural language processing (EMNLP). – 2014, October. – Pp.787-798.

44 Kemertelidze, N. Impact of Colour Symbolism on English Colour Idioms and their Georgian Equivalents / N. Kemertelidze, M. Giorgadze // International Journal of Innovative Technologies in Social Science. – 2021. – URL:

https://rsglobal.pl/index.php/ijitss/article/view/1922 (retrieved 25.05.2023).

45 Klemfuss, N., Prinzmetal, B., Ivry, R.B. How does language change perception: a cautionary note / N. Klemfuss, B. Prinzmetal, R.B. Ivry // Frontiers in psychology. – 2012. – 78 p.

46 Kleynhans, J. H. The use of colour as a tool for propaganda / J. H. Kleynhans // Interim: Interdisciplinary Journal, 6 (1). – 2007. – Pp.46-53.

47 Komorowska, E., Stanulewicz, D. Progress in Colour Studies / E. Komorowska, D. Stanulewicz. – Glasgow 2012 // BEYOND PHILOLOGY. – 2013. – 259 p.

48 Kurowska, K. Asymmetrical Portrayal of Gender in Magazines for Men with Particular Reference to Sexuality / K. Kurowska. – 2021. – URL : https://bip.ur.edu.pl/storage/file/core_files/2021/7/16/98d2590c30c53733f3fee16b4862e625/Kurowska%20K.%20-%20rozprawa%20doktorska.pdf (retrieved 25.05.2023).

49 Land, E. H. The retinex theory of colour vision / E. H. Land // Scientific american, 237 (6). – 1977. – Pp.108-129.

50 Li, X. Colour words between English and Chinese / X. Li // In International Conference on Education, Language, Art and Intercultural Communication (ICELAIC-14). Atlantis Press. – 2014, May. – Pp.737–740.

51 Lindsey, D. T., Brown, A. M. Lexical colour categories / D. T. Lindsey, A.M. Brown // Annual Review of Vision Science, 7. – 2021. – Pp.605-631.

52 Linton, H. Colour in architecture: Design methods for buildings interiors and urban spaces / H. Linton. – New York : McGraw Hill, 1999. – 190 p.

53 Lucy, J. A., Schweder, R. A. Whorf and his critics: linguistic and non-linguistic. – 1979. – URL : http://home.uchicago.edu/~johnlucy/papersmaterials/1979%20lucy-shweder.pdf (retrieved 26.05.2023).

54 Mach, E. The principles of physical optics: an historical and philosophical treatment. Courier Corporation / E. Mach. – 2013. – URL: https://books.google.co.ke/books?hl=en&lr=&id=7dPCAgAAQBAJ&oi=fnd&pg=

PA1&dq=Mach (retrieved 26.05.2023).

55 Mahnke F. Colour, environment, human response / F. Mahnke. – New York: Van Nostrand Reinhold, 1996. – URL: https://books.google.co.ke/books?hl=en&lr=&id=fAsm_3cXISAC&oi=fnd&pg=PP13&dq=Mahnke+F.+(1996).+Colour,+environment,+human+response.+New+York:+Van+Nostrand+Reinhold&ots=2u937eV5H4&sig=TsUgdcTek2sdlJWmYG8kh7EWrSI&redir_esc=y#v=onepage&q&f=true (retrieved 24.05.2023).

56 Maksimovna, K. V. Colour idioms in the English, German, and Russian languages / K. V. Maksimovna // European Journal of Literature and Linguistics, (3). – 2016. – Pp.5-7.

57 Malafouris, L. How things shape the mind / L. Malafouris. – MIT press, 2013. URL : https://books.google.co.ke/books?hl=en&lr=&id=Wb0XAAAAQBAJ&oi=fnd&pg=PR5&dq=Malafouris,+L.+How+things+shape+the+mind.+MIT+press.&ots=L8hK71-K_e&sig=GcUwkXl3aDlRNKOjVIh__EiD-CA&redir_esc=y#v=onepage&q=Malafouris%2C%20L.%20How%20things%20shape%20the%20mind.%20MIT%20press.&f=false (retrieved 24.05.2023).

58 Meier, B. P. The metaphorical representation of effect / B. P. Meier, M. D. Robinson // Metaphor and Symbol, 20(4). – 2005. – Pp. 239-257.

59 Mendelson D. Uniform colour theory. Security Management / D. Mendelson D. – 2017. – URL: https://www.asisonline.org/security-management-magazine/articles/2017/09/uniform-colour-theory/ (retrieved 27.05.2023).

60 Meyer, J. The Essential Guide to HTML5: Using Games to Learn HTML5 and JavaScript / J. Meyer. – 2010. – URL: https://openlibrary.org/books/OL25560445M/The_Essential_Guide_to_HTML5 (retrieved 27.05.2023).

61 Mikeshina, L. A. Philosophy of cognition / L. A. Mikeshina // Problems of the epistemology of humanitarian knowledge. – Moscow: Canon+ ROOI "Rehabilitation", 2008. – 678 p.

62 Pawlowska, V. Colour Symbolism in F. Scott Fitzgerald's The Great

Gatsby: An Analysis of the Meaning and Pattern of Colours / V. Pawlowska. – 2022 – P. 27.

63 Phillips, W. L. Cross- cultural differences in visual perception of colour, illusions, depth, and pictures / W. L. Phillips // Cross- Cultural Psychology: Contemporary Themes and Perspectives. – 2019. – Pp. 287-308.

64 Saunders, B. Revisiting basic colour terms / B. Saunders // Journal of the Royal Anthropological Institute, 6 (1). – 2000. – Pp.81-99.

65 Taylor, J. R. Linguistic categorization. OUP Oxford / J. R. Taylor. – 2003. – URL: https://books.google.co.ke/books?hl=en&lr=&id=z2LHUS7V3xsC&oi=fnd&pg=PP1&dq=Taylor (retrieved 27.05.2023).

66 Teliya, V. N. Linguaculturology – the key to new reality / V. N. Teliya // Language. Culture. Communication. The collection of scientific works. – 2008. – P.57.

67 Terwogt, M. M., Hoeksm J. B. Colours and emotions: Preferences and combinations / M. M. Terwogt, J. B. Hoeksm // The Journal of General Psychology, 122 (1). – 1995. – P.5-17.

68 Trafton, A. Analyzing the Language of Colour / A. Traflon. – MIT News Massachusetts Institute of Technology. – 2017, September 18. – URL: https://news.mit.edu/2017/analyzing-language-colour-0918 (retrieved 28.05.2023).

69 Underhill, J. W. Humboldt, worldview and language / J. W. Underhill. – Edinburgh University Press. URL: https://books.google.co.ke/books?hl=en&lr=&id=xGrBgAAQBAJ&oi=fnd&pg=PP1&dq=Underhill, (retrieved 28.05.2023).

70 Wierzbicka, A. The Semantics of Colour / A. Wierzbicka // Progress in Colour Studies, 1. – 2006. – Pp.1-24.

71 Witzel, C., Gegenfurtner, R. K. Colour Perception: Objects, Constancy, and Categories / C. Witzel, R. K. Gegenfurtner // Annual Review of Vision Science 4 (1). – 2018. – P. 475–99. URL: https://doi.org/10.1146/annurev-vision-091517-034231 (retrieved 25.06.2023).

72 Xue, Y. A comparative study of non-basic colour terms in Chinese and English / Y. A. Xue // Colours & cultures interdisciplinary explorations couleurs & cultures explorations interdisciplinaires. – P. 54.

73 Zaslavsky, N. Efficient compression in colour naming and its evolution / N. Zaslavsky, C. Kemp, T. Regier, N. Tishby // Proceedings of the National Academy of Sciences, 115 (31). – 2018. – Pp. 7937-7942. – URL: https://doi.org/10.1073/pnas.1800521115 (retrieved 25.05.2023).

74 Zaslavsky N. Colour Naming Reflects Both Perceptual Structure and Communicative Need / N. Zaslavsky //Topics in Cognitive Science, 11 (1). – 2019. – P. 207-219. – URL: https://doi.org/10.1111/tops.12395 (retrieved 25.05.2023).

75 Zhou, S. A cognitive analysis of conceptual metaphors of colour idioms in English and Chinese based on data mining / S. Zhou // In Application of Intelligent Systems in Multi-modal Information Analytics: Proceedings of the 2020 International Conference on Multi-model Information Analytics (MMIA2020), Volume 2. Springer International Publishing. – 2021. – Pp.349-355.

76 Zollinger, H. Categorical Colour Perception: Influence of Cultural Factors on the Differentiation of Primary and Derived Basic Colour Terms in Colour Naming by Japanese Children / H. Zollinger // Vision Research, 28 (12). – 1988. – Pp. 1379-1382. – URL: https://doi.org/10.1016/0042-6989(88)90069-7 (retrieved 25.06.2023).

SOURCES

77 Cambridge Dictionary. – URL : https://www.cambridge dictionary.com

78 Collins Dictionary. – URL : https://www.collinsdictionary.com

79 Englishclub. – URL : https://www. englishclub.com

80 Idioms on line. – URL : https://www.idiomsonline.com

81 Macmillan Dictionary. – URL : https://www.macmillan dictionary.com

82 Merriam-Webster Dictionary. – URL : https://www.merriam-webster dictionary.com

83 The idioms. – URL : https://www.theidioms.com

84 The Free dictionary. – URL : https://www.thefreedictionary.com

85 7esl.com. – URL : https://www.7esl.com