The Relationship between Colour Perception and Colour Expression in the Lexicon through the Prism of Cognitive Linguistics

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THE RELATIONSHIP BETWEEN COLOUR PERCEPTION AND COLOUR EXPRESSION IN THE LEXICON THROUGH THE PRISM OF COGNITIVE LINGUISTICS

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ABSTRACT

Colour is an astonishing phenomenon integral to human experience that constitutes our notion of the objective reality. Throughout the years, colour has gained its privileged position as a subject of thorough and varied scientific scrutiny that paved the way to a comprehensive theoretical scope regarding colour semantics and colour vision. The aim of this paper is to probe the notions regarding the domain of colour whilst elucidating the given phenomenon from a perspective of cognitive linguistics. This paper gives an insight into the cognitive model of colour and the corresponding mental category, as well as it elucidates the mental workings and mechanisms behind its production in the actual language use. The focus of the inquiry is centred around metaphor that cannot be found solely in the novel and poetic expressions, but, rather, in each and every segment of language. The domain of colour prevails in securing a significant and influential position in the field of scientific research regarding human cognition.

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INTRODUCTION

A large amount of human experience of the objective reality of the outside world revolves around colour. It represents a crucial component without which our reality unquestionably would not be devised in such a vibrant, salient and multifaceted manner. Each and every cube of the external world is filtered through the human sensorimotor apparatus resulting in a portrayal of the sunrise gold, azure of the sea and the sky, all the way to each minuscule pigment of any fibre. The aim of this paper is to elucidate the given concept of colour within the cognitive paradigm, as well as to provide an insight into a comprehensive compilation of the theoretical scope of colour vision and colour semantics, which will be covered in the first part of the paper. This subject has been under close scrutiny ever since the publication of the seminal study in 1969, “Basic Color Terms“ by Berlin and Kay, capturing the assiduous attention of not only linguists, but also of anthropologists and cognitive psychologists. The literary scope on this subject is vast and varied, and can in principle be divided into two streams; one favouring and the other rejecting the theoretical framework poised by Berlin and Kay.

The second part of this paper approaches colour from a cognitive perspective - probing the erroneous notion with respect to the concept of colour existing in the outside world, and illuminating not only on the internal structure of any colour category, but also on the interactional nature of such a cognitive concept. The third part truly provides an insight into cognitive linguistics and its theoretical approach towards the figurative language use, specifically targeting the scope of colour. Not only is one confronted with the cognitive domain of colour, but one is also introduced to a number of mental mappings and

mechanisms, understanding the workings of which is vital for the comprehension of metaphor and metonymy - two of the most prolific cognitive processes with respect to language use.

Finally, the last part covers a contrastive analysis of colour metaphors in the English language and in the Croatian language. Through several examples of metaphorical usage of red, green, yellow, blue, black and white, it is evident that cross-cultural and interlingual transfer of idiomatic expressions represents one of the most demanding tasks and problem areas in the field of translation. This contrastive analysis showcases both similarities and disparities present in the idiomatic expressions in both languages.

I. THEORETICAL STREAMS IN THE FIELD OF COLOUR SEMANTICS

The bulk of knowledge centred around the notion of colour stems from the study "Basic Colour Terms" introduced by Berlin and Kay in 1969. Respectively, much of the literature pertaining to the colour semantics appeared subsequent to its publication and can generally be divided either into research that favours its theses or rejects them. The prevailing doctrine on the nature of meaning in the post-Saussurean linguistics largely favoured the bilateral model of the sign, i. e. the relationship between *signifié* and *signifiant*, grounded upon the principle of arbitrariness. Given that such a notion influenced the stance known as linguistic relativism, that truly came into existence via Sapir-Whorf hypothesis, it was long argued that the notion of colour, in fact, served as a prime example and justification for the arbitrariness of language.

> „There is a continuous gradation of color from one end of the spectrum to the other. Yet an American describing it will list the hues as red, orange, yellow, green, blue, purple or something of the kind. There is nothing inherent either in the spectrum or the human perception of it which would compel its division in this way" (Gleason 1961: 4).

Such a relativistic stance, that renounced the existence of semantic universals, was not only favoured among linguists, but also in the field of social anthropology, subsequently attaining a position of the prevailing tenet in a plethora of social science. The lexical representation of a colour category has been displayed as a paradigmatic case of arbitrary and language-specific semantic structure (cf. Kay and McDaniel 1978: 610).

> „Language (or art) is the mold into which perception must be fitted if it is to be communicated. Any single language imprints its own 'genius' on the message. [...] Probably the most popular, because it is the most vivid, example for describing the cultural categories that the necessity to communicate creates in human perception is to compare the ways in which different peoples cut up color into communicable units. The spectrum is a continuum of light waves, with frequencies

> that (when measured in length) [sic] increase at a continuous rate. [...] But the way different cultures organize these sensations for communication show some strange differences“ (Bohannan 1963: 35, 36).

It was, in fact, Berlin and Kay (1969) who attempted to refute such a paradigm, stating that despite the diverse division of the colour spectrum an underlying universal pattern can be traced across an array of unrelated languages. “We suspect that this allegation of total arbitrariness in the way languages segment the color space is a gross overstatement” (Berlin and Kay 1969: 2). They grounded their hypothesis upon the argument that it was far too simple to translate colour lexemes among a group of unrelated languages in order to justify the thesis of extreme linguistic relativity.

Berlin and Kay conducted an experiment involving bilingual informants who were asked to elicit a given colour term, as well as to determine the focal point and boundaries of each colour term through the means of Munsell Colour chips, which encompass a set of 329 chips utilised specifically for this study. All of the chosen informants were native speakers of genetically diverse languages, which enabled Berlin and Kay to investigate colour-term semantics on 98 languages in total. Their study advocates the existence of universal basic colour categories, as well as it posits the evolutionary pattern regarding the lexicalisation of perceptual categories of basic colour terms with regard to their manifestation that follows a constrained order and uncoils in an equally universal manner. According to McDaniel such universals epitomise a fundamental aspect upon which humans perceive colour. He argues that colour perception is merely a product of an assortment of *pan-human neurophysiological processes* that constitute the crux of universal mould that can be detected across basic colour terms. In order to empirically validate the existence of semantic universals and to offer a cogent explanation for the manner in which the colour spectrum is segmented among English

speakers, one is to resort to a biologically based approach towards understanding semantic universals.

Another widespread doctrine in linguistics, that touches upon the subject of colour categorisation and distribution, is that of semantic primes described in terms of discrete entities. Depending on a linguistic school one favours or pertains to, the terminology for such entities will vary. Structuralists distinguish them as *semantic features*, and for generativists, such as J. J. Katz, they are known under the term *markers* or *distinguishers*. Despite the fact that these two theoretical streams share a great number of differences with respect to the manner in which semantic primes create the meaning of a given word or larger linguistic units, it has been agreed that semantic primes are to be understood as discrete entities – meaning that their nature is based on the relation of antonymy, commonly displayed either with a plus or a minus notation. Katz defines the relation of antonymy between lexemes as following:

> 'There are many special antonymy relations between words and expressions. One example is the relation of "sex-antonymy". A pair of lexical items is SEX-ANTONYMOUS just in case they have identical paths except that where one has the semantic marker (*Male*) the other has the semantic marker (*Female*). Some instances are: woman and man; bride and groom; aunt and uncle; cow and bull. The majority of antonymous lexical items are not sets of pairs but sets of n-tuples. For example, there are the species-antonymous lexical items, one example of a species-antonymous n-tuple being: *child, cub, puppy, kitten, cygnet*, and so on. Moreover, there are n-tuples of lexical items that are distinguisher-wise antonymous, e.g., the n-tuple of simple color adjectives (*blue, yellow, green, red, orange*). These form an antonymous n-tuple because the path associated with each is identical except for the distinguisher which differentiates that color adjective from the others' (1964: 532).

According to Katz colour terms such as *green* and *yellow* are each comprised of a number of semantic features which differ in one aspect defined as a *distinguisher* that separates them from one another and from all the other colour terms. The problem with such an approach arises when one puts compounds (e. g. *yellow-green*) into the equation, for these terms do not

cross themselves out, but, rather, assemble a somewhat transparent meaning that is to a certain degree understood both as yellow and green. Basic colour terms cannot, therefore, accurately be represented through such a method.

In order to define colour itself, Berlin and Kay had to determine and define the notion of a basic colour term due to the fact that a vast majority of expressions in a given language can in principle denote colour. Human mind, thus, appreciates the entire cultural spectrum of a given colour lexeme, in the sense that it recognises its full meaning; not only referential but also connotative. However, this study provides a sharper focus on the psychophysical dimensions of a given colour category, namely *saturation*, *hue* and *brightness*. Munsell provides definitions for these three dimensions. Hue is understood as following:

> "It is that quality by which we distinguish *one color family from another*, as red from yellow, green from blue or purple. It is specifically and technically that distinctive quality of coloring in an object or on a surface; the respect in which red, yellow, green, blue, and purple differ from one another; that quality in which colours of equal luminosity and chroma may differ" (1961: 15).

Lightness is defined as a "quality by which we distinguish a *light color from a dark one*" (Munsell 1961: 15). Finally, the third dimension, saturation or chroma, is a "quality of a color by which we distinguish a strong colour from a weak one; the degree of departure of a color sensation from that of white or grey; the intensity of a distinctive Hue; color intensity" (Munsell 1961: 16). The denotatum of a given colour is fully realised through these three dimensions.

Berlin and Kay approached the matter via a list of criteria a given term should exhibit in order to be considered a basic colour term. It had to be *monolexemic* (unlike *lemon-coloured* or *blue-green*), applicable to a vast scope of objects (unlike *blond* or *crimson*), as well as it had to be a stable term pertaining to a lexicon of all native speakers (cf. Berlin and Kay 1969: 6).

Ultimately, they came to a conclusion that a sum of eleven universal basic colour categories exists - *red, yellow, green, blue, black, white, grey, orange, brown, pink,* and *purple.*

> „In sum, our major findings indicate that the referents for the basic color terms of all languages appear to be drawn from a set of eleven universal perceptual categories, and these categories become encoded in the history of a given language in a partially fixed order. There appears to be no evidence to indicate that differences in complexity of basic color lexicons between one language and another reflect perceptual differences between the speakers of those languages" (1969: 5).

In addition, they argued that the distribution of the listed colour categories can be identified across contemporary languages through seven evolutionary stages. The complexity of a given colour lexicon will correlate strongly with the degree of cultural complexity. Stage I encompasses the languages that exhibit lexemes for only two colour categories - that of black and white. Languages that cover the category of red fall under the stage II, having exhibited a third colour category. At stage III a fourth colour emerges, which is either green or yellow. Respectively, stage IV is restricted to a colour, whichever, either green or yellow, did not emerge at the earlier stage. The development of blue is characteristic for stage V, as well as the development of brown indicates a language pertaining to stage VI. Ultimately, stage VII delineates a language with lexemes for purple, pink, grey and orange, exhibiting a fully developed lexicon comprised of all eleven colour categories.

Furthermore, Berlin and Kay observed that a given colour category exhibits an internal gradation, which leads to a conclusion that one can in principle isolate a focus of any colour category. Not only did they attempt to target the foci of colour categories, but they also tried to determine its boundaries. The latter, however, proved to be extremely demanding. The notion of colour foci was initially proposed by Lenneberg and his associates who argued the following:

> "[I]t appears that some stimuli are more likely to elicit a given verbal response than others. One can think, for example, of a color which is more typically yellow than another […] We shall use the term focus to describe that cluster of stimuli which has an extremely high probability of eliciting one distinct verbal response" (Lenneberg and Roberts 1956: 16).

Due to the inconsistency observed with respect to boundaries, in contrast to category foci, Berlin and Kay noted: "[W]henever we speak of colour categories, *we refer to the foci of categories, rather than to their boundaries or total area*, except when specifically stating otherwise" (1969: 13). Berlin and Kay finalised their study with a summary that concentrates on their three major findings:

> "Our research to date points to three main conclusions. First, there exist universally for humans eleven basic perceptual color categories, which serve as the psychophysical referents of the eleven or fewer basic color terms in any language. Second, in the history of a given language, encoding of perceptual categories into basic color terms follows a fixed partial order. […] Third, the overall temporal order is properly considered an evolutionary one; color lexicons with few terms tend to occur in association with relatively simple cultures and simple technologies, while color lexicons with many terms tend to occur in association with complex cultures and complex technologies" (1969: 104).

Since its publication, the study has received comprehensive and mixed criticism, as early as 1971, with the aim to challenge or support its methodology. The central criticism against its theses questions the size of sample languages with respect to their representatives, as well as it probes the very definition of basic colour terms and their cross-cultural translatability. With respect to informants, one is provided merely with the fact that they were bilingual; fluent in their native language and capable of expressing themselves in the English language. However, one does not know to which extent the informants acquired both the lexicon and the form of conceptualisation pertaining to the English language whilst living in the United States.

Whether they conceptualised colour in terms of their native language or not, is put into question.

The problem with the approach Berlin and Kay undertook with their endeavour to determine the basic colour lexis is that they assume that colour terminology applies merely on aperture colours, excluding surface colours, i. e. colours which cannot be accounted for without the surface texture. One of such cases is the blue colour of the blue jay feathers that is solely perceived as blue due to the texture of its feathers - i. e. colour emerges as a product of light reflection, for the real colour of the feathers is brown, indicating that the pigment present in the feathers is essentially a broken hue (cf. Simpson 1991: 427). This presupposition, the blue colour of the feathers, is integrated into their notion of basic colour terms, consequently regarding any other colour discordant with their theoretical framework as secondary, combinatory and derivative, colour term. Furthermore, Berlin and Kay postulate the existence of cross-cultural evolution of eleven basic colour terms, which arise in a stipulated order. However, the simplest of lexicons exhibits less fundamental differences, e. g. the differentiation in terms of brightness and darkness. The most complex and rich differences seem to be reducible to eleven basic terms, excluding derivative or combinatory colours, the ones carrying the name of an object (*aqua, salmon*), as well as loan words. Provided this reduction is a valid one, Berlin and Kay deduce:

> "In addition to the fact that the stages of complexity of color vocabulary have a temporal ordering, there appears to be a positive correlation between general cultural complexity (and/or level of technological development) and complexity of color vocabulary" (1969: 16).

Both the definition of the basic colour lexicon and the employment of its criteria with respect to Berlin and Kay are of arbitrary nature. Generally, humans acknowledge hues produced

through the prism of *pure* colours as fundamental and deem them superior to colours produced by light reflection (cf. Simpson 1991: 413). Consequently, the theoretical framework presented by Berlin and Kay is also treated as fundamental. Extracting terms out of the given context and sharply differentiating them from borrowed ones is contradictory to one of the dominant processes that shape and enrich the language – that of metaphor. Basic colour terms, excluding black and white, and possibly red, emerged in language through metaphorical extension, i. e. they were given the name of an object or a set of them. Consider, *purple*, listed as a basic colour term, originating from a Latin term, *purpure purpuram*, a name designating a mollusc known for its *purple* dye. Such terms (e.g. *gold*, *green*, *orange*) entered the English vocabulary through the years, subsequently attaining a wide extension. In light of this argument, one may view this study as a justification for the fact that many of the languages tested by Berlin and Kay are not reducible to the colour terminology utilised by English speakers.

The issue of translatability boils down to the extension of basic colour terms, in the sense that the smaller the number of basic colour terms in English is, the wider extension of such a lexicon prevails, which makes it much more demanding to find an exact equivalent not only in English but also across all other languages with lexicalised colour categories. Thus, translating English terms into a language that recognises colour categories of black and white should not presuppose that their extension corresponds to that of the English one. With respect to black and white, these two categories are often associated with and mistaken for the notions of brightness and darkness, yet the equivalence between those is rather a dubious one. Given that such notions revolve around reflectance and illumination, the erroneous notion of black standing for dark, as well as white for bright, does not hold ground.

The case of Dani language is of particular interest due to its colour terminology - *mili* and *mola* - two visual descriptions that cannot be equated in any manner with any English term.

Mili represents a term that encompasses both light shades and warm colours, and *mola* represents a term that encompasses both dark shades and cool colours. Rosch argues that the domain of colour for Dani people is coupled with the one of light, apparent in the lexicalisation of it, which ultimately questions the very position of the notion of colour as a universal one. In the point of fact, English lexemes for basic colour terms do not entirely capture the meaning of colour universally shared among the speakers of languages that recognise this domain, and therefore cannot account for the categorization of a given colour domain in other languages. Berlin and Kay utilise the English lexicon as a tool via which they probe the conceptual/perceptual domain of colour, as well as they define lexicons of other languages in terms of the English one, which ultimately leads to the fact that they utilise English colour words in order to gloss over the universals of human cognition. Rather than approaching the matter in a manner suitable for and agreeable with other languages and their lexicons, with the intention of finding visual descriptions of colours, they make use of Munsell Colour Chart, an extraneous apparatus.

> "We are now in a position to see why the dismay, perplexity and bewilderment of the people requested to perform the mappings is wholly justified. The Munsell Color Chart, presented as the neutral, universal and value-free referent of 'color' is a translation machine designed to calibrate Evolutionary mentation in terms of the application of an 'epigenetic rule'. It is a device which transmutes indigenous meanings onto a single standard of what there is, a standard that decrees that American English abstract color terms have absolute ontological independence" (Saunders 1992:188-89).

In addition, Dimmendaal argues: "In other words, the lexical meanings of color terms in languages are reduced to denotational meanings, more specifically the denotational value of English lexical items, which are used as the metacategories for comparative work" (1995: 5). Dimmendaal and many other critics deem the study ethnocentric, specifically Anglocentric. Respectively, Wierzbicka provides mind-altering arguments against the notion of colour as a

semantic universal. She states that even though colour makes up a great part of the English language, not all human languages have a word for colour, which eliminates colour from the list of semantic universals.

> "The structure of the experiential world differs, to some extent, from language to language. There are many different experiential worlds, and, if we try to explore them through shared human concepts rather than through English alone, we can get closer to the experiential worlds inhabited by the speakers of languages other than English. The fact that we may never be able to capture those worlds fully or perfectly is not a good reason not to try to get as close to them as possible" (Wierzbicka 2005: 221).

Wierzbicka ventured on a quest for semantic universals and has been pursuing this quest for over thirty years. Her research carried out within the *Natural Semantic Metalanguage* (NSM) project has shown that all human languages exhibit a list of approximately sixty semantic primitives, which represent lexicalised items of universally shared cognitive concepts. Wierzbicka distinguishes semantic atoms from semantic molecules. Consider the word *tree* as a semantic molecule which meaning encompasses and can be segmented into words such as *birch*, *oak* or *pine*. The fact that *tree* represents a vital concept in the English language is not to be equated with the presupposition that the lexemes for this concept cover the same meaning as the one in the English language. Given that it represents a significant semantic molecule in the English lexicon, the same principle applies to colour. However, it should not be equated with a semantic primitive, for not all human languages have a lexicalised form for this cognitive concept. Wierzbicka proposes the semantic primitive *see* as a valid reference point for further research, and argues that the concept of colour is closely related to the one of seeing. The manner in which human mind recognises and perceives colour revolves around human vision, i. e. colour is equated with the knowledge grounded in visual experience (cf. 2005: 229).

II. COLOUR AS A COGNITIVE CONCEPT

Humans frequently associate colour with objects that make up our external reality; *blue* as the sky, *green* as grass, *red* as blood, etc. However, research carried out in the field of cognitive science gives another insight into the concept of colour. Along with the evolution of human species, human brain equally went through the same evolution. Hence, humans have evolved to perceive and recognise colour. The perception of colour revolves around four factors which are responsible for the human experience of it. These factors include:

> "wavelengths of reflected light, lighting conditions, and two aspects of our bodies: (1) the three kinds of color cones in our retinas, which absorb light of long, medium, and short wavelengths, and (2) the complex neural circuitry connected to those cones" (Lakoff and Johnson 1999: 40).

Numerous constant and variable factors constitute the perception of colour: the surface of an object, specifically the frequency of light reflecting the surface colour being the constant one, and the particular wavelength of reflected light being variable. The wavelength of reflected light is dependent on its nature, given that under various conditions (e. g. a *sunny* or *cloudy day*, at *dawn* or *dusk*) the wavelength varies, while the surface colour remains relatively constant. Colour is, therefore, solely a result of a given wavelength, meaning that it depends on the brain's ability to differentiate between the variations of reflected light. It is crucial, however, to bear in mind that two dissimilar reflectances can in principle denote the same colour.

Furthermore, a prevalent misconception is that light is coloured, yet this is wrong. Light is made up of electromagnetic radiation, in the sense that light is actually a wave that vibrates at a given frequency. Colour, however, appears once this wave reaches the human retinas.

Consequently, under particular lighting conditions, human retina recognises the radiation, produces an electrical signal that is ultimately processed in the brain - result of such a process is known as colour (cf. Lakoff and Johnson 1999: 42). The concept of colour exhibits an internal structure that is comprised of both its focal points, as well as its peripheral hues. Focal points are equated with those frequencies that receive the maximal neural response. This structure is a product of "response curves for color in our brains" (Lakoff and Johnson 1999: 44), meaning that the internal structure of a given colour category cannot be found in the external surface reflectances. "Colors as we see them, say, the red of blood or the blue of the sky, are not out there in the blood or the sky" (Lakoff and Johnson 1999: 45).

The concept of colour is an interactional one; it is an interactive product comprised of both the ability of our visual and cognitive apparatus, as well as the light reflectance and electromagnetic waves. Colour cannot be defined as objective nor subjective, for one does not find green in the grass to deem it objective, and neither is colour a figment of human imagination to deem it subjective. The notion of colour in philosophical terms is, thus, justifiable as an *embodied realism*, i. e. interactionism neither solely subjective nor solely objective. As an interactional concept, colour is a product of our biology coupled with the world, but not a product of culture. This argument does not exclude the fact that colour differs significantly with respect to a given culture, however, as a cognitive concept, it fulfils the conjoined function of the human sensorimotor system, and of the world. Respectively, a culture in which vegetation plays a vital role will accordingly distinguish an array of peripheral hues pertaining to the colour category of green. This occurrence is purely experiential, i. e. it is grounded in experience.

III. COLOUR IN FIGURATIVE LANGUAGE

3. 1. METAPHOR

Prior to the seminal work of Lakoff and Johnson, metaphor had been studied outside of linguistic frames - pertaining only to the realm of figurative language use, and identified merely as a literary device, a trope. In their work "Metaphors we Live by" Lakoff and Johnson (1980) explore the realm of metaphoric expression and posit metaphor as an integral and central element of the cognitive paradigm. They argue that a significant amount of human interaction is, in fact, governed by metaphorical expression which rises above the mere figurative language use and constitutes the crux of human thought. Its ebb and its flow can be traced in all aspects of language, for metaphor exists in the human thought and constitutes not only poetic and novel expressions, but it can also be traced in each cube of everyday expressions and abstract concepts, e. g. time, change, purpose, causation, etc.

> "But metaphor is not merely a matter of language. It is a matter of conceptual structure. And conceptual structure is not merely a matter of the intellect — it involves all the natural dimensions of our experience, including aspects of our sense experiences: color, shape, texture, sound, etc. These dimensions structure not only mundane experience but aesthetic experience as well. Each art medium picks out certain dimensions of our experience and excludes others. Artworks provide new ways of structuring our experience in terms of these natural dimensions. Works of art provide new experiential gestalts and, therefore, new coherences. From the experientialist point of view, art is, in general, a matter of imaginative rationality and a means of creating new realities. Aesthetic experience is thus not limited to the official art world. It can occur in any aspect of our everyday lives—whenever we take note of, or create for ourselves, new coherences that are not part of our conventionalized mode of perception or thought" (Lakoff and Johnson 1980, 236-237).

Lakoff and Johnson argue that metaphor pervades all interaction - it is a product of human conceptualisation, i. e. metaphor is conceptual in nature that externally manifests itself in language, as well as it serves as a key ingredient for the entirety of human reasoning and cognitive processes. "Conceptualization is broadly defined to encompass any facet of mental

experience. [...] [C]onceptualization resides in cognitive processing. Having a certain mental experience resides in the occurrence of a certain kind of neurological activity." (Langacker 2008: 30-31).

"The essence of metaphor is understanding and experiencing one kind of thing in terms of another" (Lakoff and Johnson 1980: 6). Metaphor implies organisation of the conceptual content of one conceptual domain in terms of another, i. e. semantic features of the *source domain* are projected onto the *target domain* (cf. Langacker 2008: 36). Such a process is defined as *blending* via which the semantic content of two affected domains results in a new, hybrid one, which endless combinatory possibilities devise original, and often virtual, content. *Cognitive domain* is understood as a cognitive structure that in a given context of language use takes hold over the content of an ICM (Idealised Cognitive Model). ICM (Lakoff, 1987) or *frame* (Fillmore, 1982) stands for a multidimensional semantic structure that displays knowledge called up at a given point, the extension of which will depend on the context of and purpose for utilising this knowledge. Hence, the content at disposal is, with regards to perspective, open to either backgrounding or foregrounding, which is closely related to the theory of *Figure* and *Ground*; *Figure* designating a given reference point, and *Ground* designating a position of the object or entity placed with regards to the *Figure* (cf. Brala-Vukanović 2013: 127).

Metaphors are closely related to culture, in the sense that there is an ongoing interrelationship between language and culture, both of which are vital carriers of information that merge and mirror each other's characteristics."The most fundamental values in a culture will be coherent with the metaphorical structure of the most fundamental concepts in the culture. [...] These are values deeply embedded in our culture" (Lakoff and Johnson 1980: 23). The manner in which language carves the patterns of human thought and cognition is similar to that of a given culture.

> "[H]uman thought processes are largely metaphorical. This is what we mean when we say that the human conceptual system is metaphorically structured and defined. Metaphors as linguistic expressions are possible precisely because there are metaphors in a person's conceptual system" (Lakoff and Johnson 1980: 7).

Since thought and cognition are inevitably metaphorical, culture exemplifies a concept that is profoundly metaphoric. Cultural models constitute commonplace knowledge, which lies at the crux of primary metaphors that are derived from the perpetual interaction with the world. Metaphor is, therefore, understood as a universal concept shared across all cultures, however, the application of which, i. e. the lexicalisation or linguistic expression of it, is culture-specific.

3.2 METONYMICAL MECHANISMS

An alternative scientific approach posits that metaphoric expression, specifically one pertaining to colour semantics, is, in fact, metonymically motivated, i. e. in contrast to cross-domain mapping, metonymy exemplifies conceptual mapping within the same domain. The most common metonymic relation is either *part-whole* or *part-part* one. In the first case, a colour used as an attribute characterises the entire category - e. g. *the blacks* and *the whites*. These two expressions are quite similar to expressions *black people* and *white people*. The difference between the two lies in the fact that in the first example the attribute represents the entire category, but in the second the primary domain is provided through the nominal phrase. The examples of *white people* and *black people* refer to type metonymy, which designates a subtype that refers to a given type. Similar cases may be found in expressions such as *white lie, yellow journalism, black magic, purple prose*, etc. In other words, all of the listed expressions designate a subtype of a given type - a type of lie, a type of prose, a type of

magic. In contrast to *part-whole* metonymy exemplified above (*the blacks, the whites*), *part-part* metonymy represents a case where colour designates an abstract quality of an object it refers to.

Consider the following expressions: *purple prose, black market, yellow journalism*. In the case of *purple prose*, the initial meaning of the colour purple is equated with SWELLING or with BRUISE - once somebody suffers a physical injury, the affected area of the body turns purple. However, the synchronic approach towards this matter may not be a valid one. Once approached diachronically, purple goes back to the phrase *purpureus pannus* originating from an ancient text, "De Arte Poetica" by Horace, which is closely related to an expression of *purple patch*, semantic features of which equally correspond to those of *purple prose*. Respectively, the original meaning of purple covers the meaning of ROYALTY, suggesting that it designates something of high quality, excellence, and splendour. Given that a direct link between the vehicle concept and the target one does not exist, it is extremely difficult to decode the meaning of such a structure, for one needs to be familiar with the given context, as well as with the etymology of a given phrase. If for some reason the formative domain would lose its rank, the meaning of the entire metonym would be almost impossible to decipher (cf. Steinvall 2008: 204). In addition, purple in these two expressions provides a good example for pejoration, since the original meaning of both phrases in the majority of cases lost their positive meaning, subsequently attaining a rather negative one; purple passages of prose are frequently regarded as kitsch or pretentious.

The example of *black market* can be analysed in a similar manner. Black carries the meaning of EVIL, DARKNESS, and MALEVOLENCE:

> "Blackness is associated with darkness/night. And darkness/night typically evokes fear in people: one cannot see what goes on, and one feels threatened. In other words, darkness/night is perceived

> as malevolent, and its outstanding characteristic, blackness, is metaphorically transferred to malevolent events, deeds and characters" (Kikuchi and Lichtenberk 1983: 31).

In this example a process similar to that of purple takes place, however, it is questionable and open to interpretation since NIGHT is an experience of pan-human nature, i. e. the connection between two concepts is easier to deduce. The contemporary meaning of *black market* refers to that of illegal trade, suggesting that the colour black appears to be an essential vantage point for WRONGDOING in contrast to white, which designates GOODNESS, INNOCENCE and LIGHT.

Finally, the example of *yellow journalism* originates from a cartoon figure of a child in a yellow dress that appeared in the 1895 edition of the New York World newspaper for the purposes of attracting buyers - designating an individual who served as motivation for an abstract attribute (cf. Steinvall 2008: 205). Despite the fact that the original motivation vanished, the expression remained within the realms of journalism coupled with its derogatory sense. Consider, for instance, the expression of *yellow streak* in the sense of COWARDICE.

Two of the mentioned metonymical mechanisms, *part-whole* and *part-part* metonymy, can be regarded as probable explications for the creation of figurative colour expressions. It is vital to note, however, that such metonymical workings cannot be constantly active, but should, rather, be regarded as initial stages with respect to the production of such phrases. In other words, the initial mapping may serve as a link in the radial network of derived senses, i. e. the given expression evolved into a polysemous one.

3.3 RADIAL NETWORKS

The semantic structure of a figurative expression resembles the one of a radial network that generates a given cognitive concept. A number of nodes pertaining to such a semantic structure are intrinsically connected, which enables one to extract a given subschema, single semantic facet, out of the expansive mechanism. The expansion of a lexical network within a given schema is possible due to the interrelated workings of two poles, *syntagmatic* and *paradigmatic* one. *Syntagmatic* pole (horizontal axis) is realised through isomorphism, i. e. there is a correlation between a formal structure and a semantic one. *Paradigmatic* pole (vertical axis) is realised through motivation, in the sense that the idiomatic meaning cannot be deciphered from the initial meaning, for the image of such a motivation can no longer be identified.

Consider the colour term *green* in the following expressions: *green party*, *green ideas* or *green products*. The term is quite flexible and exhibits a rich extension, which is mainly centred around the general notion of ECOLOGICAL that is originally derived from the domain of NATURE. Even though the colour predominantly appears in the political context, one may extract it out of the formative domain and apply it on concrete objects. For instance, the expression *green car* is open to an ambiguous interpretation - either as a car with a green surface or as a car that is environmentally friendly.

In the expression *green with envy*, one is presented with a case where *green* stands for *jealousy* and *envy* indicating that the given colour is equated with a strong emotion. Diachronically analysed, the phrase goes back to *the green-eyed monster* from the Shakespeare's drama “Othello“, and designates, again, jealousy and envy. This is, also, a rather pictorial conceptual representation, for one is confronted with an image of an individual with a green complexion. In addition, the meaning entailed in *green* is often associated with *yellow* and appears in connection with *bile* - the metonymic relation between the three

generates a substantial number of expressions where colour stands for disease or state of nausea. In such cases, English favours the colour term *green*, as it is evident in the following expression – *to be green around gills*. In Croatian, however, *green* is often substituted with *yellow* in the expressions that cover the identical concept, e. g. ʻ*žut kao limun*'. Given its association with nature, *green* encompasses the meaning of *youth* and *freshness*, but also of *inexperience* and *puerility*. An equal exchange of colours, *green* and *yellow*, is evident once the English idiom *green behind the ears* is rendered into the corresponding Croatian idiom ʻ*žutokljunac*' - the same concept is presented in both expressions, however, different colours, as well as body parts, are utilised in the formal structure.

In the example of the colour term *green*, it is possible to ascertain the schematic network of meanings pertaining to *green* that generates a concept of it. Given its rich extension, it is possible to establish nodes in this network that exhibit a connection with it, as well as it is possible to extract them as an individual subschema. As mentioned above, the entire radial structure of *green* encompasses both denotative along with a full palette of connotative meanings.

IV. CONTRASTIVE ANALYSIS OF COLOUR METAPHORS IN ENGLISH AND CROATIAN

A language as lexically dense and rich as English exhibits a vibrant palette of colour expressions - collocations, idioms, as well as free linguistic structures - comprised of either colour words or those designating a given colour. The aim of any contrastive analysis is to juxtapose two distinct languages in order to classify their similarities and their differences. In light of this argument, one may view this procedure as an interlingual analysis at the core of which lies the subject of translatability. The following analysis will include a tabulated overview of six colour categories with corresponding colour expressions, predominantly of idiomatic nature, in the English language and cover nearest equivalents in the Croatian language, where feasible.[1]

GREEN		
ENGLISH EXPRESSION	CROATIAN EXPRESSION	MEANING
to have green fingers, to have a green thumb		a person with a talent for gardening
to give someone a green light	*dati zeleno svjetlo*	to be given a permission to do something
turn the corner, come out ahead	*doći na zelenu granu*	to terminate something in an advantageous manner
to be green around gills	*biti zelen u licu, žut kao limun*	nauseated
to be green as grass	*biti mlad i zelen*	an individual who lacks experience and maturity
be green with envy	*pozelenjeti od zavisti, pozelenjeti od ljubomore*	an extremely jealous person
to wear the green willow		to suffer from an unrequited love or to mourn over a lost lover
the rub of green		good luck, especially in sports
green behind the ears	*žutokljunac*	an individual who lacks experience and maturity

[1] the provided translations have been attested by the examples found on the online dictionary website <http://hjp.znanje.hr>

YELLOW		
ENGLISH EXPRESSION	CROATIAN EXPRESSION	MEANING
	žuta kuća	a mental institution
to go nuclear, the whim took somebody	*žuta minuta*	to act in an unpredictable and impulsive manner
have had one's chips, to be dead meat	*nagrebusiti kao žuti*	used as a threat, one will be punished severely for something one has done, to be in trouble
yellow journalism, yellow rag	*žuti tisak*	newspaper columns filled with sensational and offensive content
a yellow-bellied person, yellow streak		cowardice

RED		
ENGLISH EXPRESSION	CROATIAN EXPRESSION	MEANING
like a red flag to the bull	*kao biku crvena krpa*	a provocation
the red carpet, roll out the red carpet	*crveni tepih*	to receive or give a royal treatment
is like a thread running through something	*provlači se kao crvena nit*	the main idea, central thought
be in the red	*biti u crvenom*	in debt
as red as a turkey cock, as red as a tomato, as red as a poppy, as red as a peony, as red as a beetroot, as red as a lobster	*crven kao paprika, crven kao rak, crven kao jabuka*	human complexion in the moments of anger and embarrassment
be shown the red card	*dobiti crveni karton*	derived from football terminology, to be dismissed
red herring		a misleading, unimportant matter that draws attention away from the main subject
red in tooth and claw	*pocrvenjeti od bijesa*	a ruthless conflict or competition
a red letter day		a memorable and joyous day
a red eye		an airplane flight taking off after midnight
red tape, to catch somebody red-handed		official or bureaucratic tasks, wrongdoing or an inappropriate and illegal conduct

BLUE		
ENGLISH EXPRESSION	CROATIAN EXPRESSION	MEANING
blue blood, true blood	*plava krv*	of noble or aristocratic ancestry
a brown envelope	*plava kuverta*	Bribery
a blue collar	*plavi ovratnik*	a manual worker
like blue blazes		to do an excessive amount of something
talk a blue streak		to talk rapidly and very much
a bolt from the blue, out of the blue	*kao grom iz vedra neba*	a random and sudden occurrence
a blue-eyed boy		a young man in a position of higher authority
boys in blue	*plavci*	police officers
once in a blue moon		an extremely rare occurrence
blue in the face		an unsuccessful attempt at winning somebody's agreement
to feel blue		to feel depressed
a blue ribbon		of superior quality
a blue pencil		to limit or censor the given information

WHITE		
ENGLISH EXPRESSION	CROATIAN EXPRESSION	MEANING
a white collar	*bijeli ovratnik*	a professional, a managerial or an administrative worker
as white as snow	*bijel kao snijeg*	very white
to bleed somebody white		to deprive someone of financial resources
a whited sepulchre		a hypocrite
to show the white feather, to raise a white flag		to surrender
a white elephant	*bijeli slon*	a useless possession
a grass widower, a grass widow	*bijeli udovac, bijela udovica*	a female or a male person living away from his or hers spouse
a white lie	*bijela laž*	a harmless lie told out of politeness
the wide world	*bijeli svijet*	distant and unknown horizons
in broad daylight	*usred bijela dana*	during daylight, in the open
as white as a sheet, as white as a ghost	*bijel kao kreda, bijel bjelcat*	pale complexion as a result of shock, pain, illness or fear

BLACK		
ENGLISH EXPRESSION	CROATIAN EXPRESSION	MEANING
black humour	*crni humor*	sarcastic or ironic humour
black Friday	*crni petak*	the day after Thanksgiving on which shops provide special discount
in black and white	*crno na bijelo*	a clearly defined and official statement in written form
a black day	*crni dan*	a day marking a sad or an unpleasant event
a black eye		something that destroys one's reputation
the black market	*crno tržište*	a business of illegal buying or selling
black gold	*crno zlato*	oil
a black tie event		a formal social event with a formal dress code
the black sheep	*crna ovca*	the odd member of a family or a group
to be in the black		to earn a larger sum of money than you spend
to look at the dark side	*gledati crno*	to look at the negative side of a situation
dark thoughts	*crne misli*	depressing and negative thoughts
to keep something for a rainy day	*čuvati za crne dane*	to save money in order to have it when one might need it
blacken somebody's reputation / name / character	*ocrniti obraz*	to say or commit something harmful to someone's reputation
to work off the books	*raditi na crno*	not officially recorded payment, without taxation
to be on somebody's blacklist, to put somebody on the blacklist	*staviti na crnu listu, biti na čijoj crnoj listi*	a list of individuals who are under suspicion or dislike

Upon closer inspection, the key task of translation is to attain an equivalence. Under the term of equivalence one is to understand an equivalent expression in the TL (*target language*) that corresponds to the one in the SL (*source language*), both in value and volume. A successful completion of such a task is, however, a rather demanding one. Full or absolute equivalence in both semantic and formal structure is seldom a case. Although the presented metaphoric expressions with colours in both languages exhibit similarities, it is vital to note that they are

not necessarily comprised of exact lexical units. A great number of idiomatic expressions are language- and culture-specific, the reason due to which it is extremely demanding to transfer not only the cultural content but diverse mental mappings vital to their creation as well. The crucial conundrum is, therefore, to ascertain an adequate procedure for transferring the culturally coloured content in order to breach the cultural border whilst operating as a mediator between the two.

With respect to the given contrastive analysis, idiomatic expressions with colours can be divided into four groups on the basis of equivalence (cf. Turk and Opašić 2008: 19). The first group comprises expressions that exhibit full equivalence - both the concept and the lexical structure of the ST (*source text*) are retained in the TT (*target text*). Such are, for instance: *black humour* and ʻ*crni humor*ʼ; *the black sheep* and ʻ*crna ovca*ʼ; *blue blood* and ʻ*plava krv*ʼ; *a white lie* and ʻ*bijela laž*ʼ.

The second group comprises expressions that exhibit partial equivalence, in the sense that the expressions in the SL and in the TL exhibit differences regarding their formal structure. This group can be further subdivided into three sections depending on the extent of the deviation. Expressions such as ʻ*crven kao paprika*ʼ and *as red as a beetroot*, *like a red flag to the bull* and ʻ*kao biku crvena krpa*ʼ, *blacken somebody's reputation/name/character* and ʻ*ocrniti obraz*ʼ fall under the first section due to the partial lexical deviation. The second section is characterised by partial structural deviation and includes expressions such as: *to be green with envy* and ʻ*pozelenjeti od zavisti*ʼ; *in black and white* and ʻ*crno na bijelo*ʼ. The final, third, section includes expressions with both lexical and structural deviation. Such are, for instance: *to be green as grass* and ʻ*biti mlad i zelen*ʼ; *to be green around gills* and ʻ*biti zelen u licu*ʼ.

The third group comprises expressions that exhibit zero equivalence; i. e. both lexical and structural deviation is not only present in any expression as a whole, but it can be identified

among its individual constituents as well. Despite the fact that both of the idiomatic expressions, in English and in Croatian, convey the same meaning, they will, however, exhibit differences with respect to the cultural background and conditions under which they came into existence. Such are, for instance: *to work off the books* and ʻ*raditi na crno*ʼ; *to look at the dark side* and ʻ*gledati crno*ʼ; *to keep something for a rainy day* and ʻ*čuvati za crne dane*ʼ; *a bolt from the blue* and ʻ*kao grom iz vedra neba*ʼ; *to be dead meat* and ʻ*nagrebusiti kao žuti*ʼ.

The final, fourth, group comprises expressions for which either the English language or the Croatian language cannot offer a suitable idiomatic translation in the TL. The majority of those are culture- and language-specific English idioms for which the Croatian language does not have a lexicalised concept. Such idioms are usually translated in a descriptive manner, *translation by paraphrase* (cf. Baker 1992: 74), for Croatian does not have a corresponding idiomatic expression to cover its semantic meaning. Consider: *a black tie event*; *to bleed somebody white*; *a blue ribbon*; *a red eye.*

The contrastive analysis and the classification of the colour expressions lead to a conclusion that idiomatic expressions with colours, between the two languages in question, exhibit both similarities, the majority of which are grounded in universal experience, and differences, which are grounded in language- and culture-specific idiosyncrasies that are responsible for varying degrees of both semantic and structural deviation.

CONCLUSION

The domain of colour has been subjected to a thorough scrutiny over the subsequent decades given the multiformity and the magnitude of an extensive critical compilation on colour semantics and colour vision, only a glimpse of which is presented in the first section of this paper. The crux of the matter lies in the ongoing theoretical debate over the nature of colour domain, namely the once accepted and praised position of the Sapir-Whorfian thesis regarding cultural relativism is put into question.

Furthermore, a great deal of research is dedicated to colour categorisation with respect to its cultural complexity and lexical salience. This paper sheds light on the matter from a cognitive perspective insofar as elucidating the internal structure of the mental category and the corresponding mental concept, as well as delving into the figurative language use of colour. The crucial role in the realm of language use is carried out by metaphor, mental mappings and workings of which constitute the essence of our understanding of human cognition. Metaphor has acquired its quintessential position in each and every part of language, not only among the poetic and novel expressions.

As a frequent segment of metaphoric expression, colour has also found its way among idiomatic expressions - fixed and conventionalised multi-word expressions which are often culturally coloured. Among the idiomatic expressions utilised for purposes of the contrastive analysis of this paper, with regards to equivalence, three major groups had been identified: idioms exhibiting full equivalence, partial equivalence, and zero equivalence. The classification was carried out on the basis of their lexical and formal structure. The fourth group was mentioned with regards to those idiomatic expressions that exhibit no similarities in the TL, and for which a suitable idiomatic translation cannot be attained. Idiomatic

expressions with colours can, therefore, be segmented into those grounded in universal experience, as well as into those grounded in language- and culture-specific idiosyncrasies.

Finally, colour categorisation is a result of complex cognitive and perceptual mechanisms which are either species- or culture-specific. Colour cannot be found in the external world separate from human cognitive and perceptual capabilities, but, rather, it exemplifies a mental category that is embodied, consensual and, ultimately, experiential. The significance of this rich and complex domain should not be denied given its implication in both synchronic and diachronic perspicacity regarding human cognition. Colour remains one of the most fascinating and far-reaching subjects open to scientific scrutiny.

BIBLIOGRAPHY

1. Baker, M. (1992). *In other words: A coursebook on translation*. London and New York: Routledge.
2. Berlin, B. and P. Kay (1969). *Basic Color Terms: Their Universality and Evolution.* Berkeley: University of California Press.
3. Bohannan, Paul. (1963). *Social Anthropology*. New York: Holt, Rinehart and Winston.
4. Brala – Vukanović, Marija. (2013). *Perspectives on Meaning. An introduction to Philosophical, Lexical and Cognitive Semantics*. Rijeka: Faculty of Humanities and Social Sciences.
5. Dimmendaal, Gerrit. (1995). *Studying Lexical-Semantic Fields in Languages: Nature versus Nurture, or Where Does Culture Come in These Days?* Frankfurter Afrikanistische Blätter 7. Frankfort am Main: Frankfurter Afrikanistische Blätter.
6. Fillmore, Charles J. (1982). ʻFrame Semantics’. In Linguistic Society of Korea (ed.), *Linguistics in the Morning Calm*, pp. 111–137. Seoul: Hanshin.
7. Gleason, H. A. (1961). *An Introduction to Descriptive Linguistics*. New York: Holt, Rinehart and Winston.
8. Katz, J. J. (1964). *Analyticity and contradiction in natural language. The structure of languages*, ed. by J. A. Fodor & J. J. Katz, pp. 519-43. Englewood Cliffs, N.J.: Prentice-Hall.
9. Kikuchi, A. and F. Lichtenberk. (1983). ʻSemantic Extension in the Colour Lexicon’. *Studies in Language*, Vol. 7, No. 1, pp. 25-64.
10. Langacker, R. W. (2008). *Cognitive Grammar. A Basic Introduction*. Oxford: Oxford University Press.

11. Lakoff, G. (1993). ‘The contemporary theory of metaphor’. In Ortony, A. (ed). *Metaphor and Thought* (2nd Eds.). New York: Cambridge University Press.
12. Lakoff, G. and M. Johnson. (1980). *Metaphors we Live by*. Chicago: University of Chicago Press.
13. Lakoff, G. and M. Johnson. (1999). *Philosophy in the Flesh: The embodied mind and its challenge to Western thought*. New York: Basic Books.
14. Lenneberg, E.H. and J.M. Roberts. (1956). ‘The Language of Experience: A Study in Methodology’. Indiana University Publications in Anthropology and Linguistics. Memoir 13: supplement to *International Journal of American Linguistics*, Vol. 22, No. 2. Baltimore: Waverley Press Inc.
15. Kay, Paul and C. K. McDaniel. (1978). ‘The Linguistic Significance of the Meanings of Basic Color Terms’. *Language*, Vol. 54, No. 3, pp. 610-646.
16. Munsell, A. H. (1961). *A Color Notation*. 11th ed. Baltimore: Munsell Color Company.
17. Saunders, Barbara. (1992). *The Invention of Basic Colour Terms*. Utrecht: ISOR.
18. Simpson, Carl. (1991). ‘Colour Perception: Cross-Cultural Linguistic Translation and Relativism’. *Journal for the Theory of Social Behaviour*, Vol. 21, No. 4, pp. 409–430.
19. Steinvall, Anders. (2002). *English colour terms in context*. (Skrifter från moderna språk, 3.) Umeå: Umeå Universitet: Institutionen för moderna språk.
20. Turk, Marija and Opašić, Maja. (2008). "Supostavna raščlamba frazema". *Fluminensia*, Vol. 20, No. 1, pp. 19-31.
21. Wierzbicka, Anna. (2005). ‘There Are No "Color Universals" but There Are Universals of Visual Semantics’. *Anthropological Linguistics*, Vol. 47, No. 2, pp. 217-244.

DICTIONARIES

Merriam Webster Online. <https://www.merriam-webster.com> Accessed 20th August 2017.

Hrvatski jezični portal. <http://hjp.znanje.hr> Accessed 20th August 2017.