

*Vasyl Starko*

**Language and culture: a view from categorization studies**  
**Question: What are paradigmatic theses in linguistics?**

Lesya Ukrainka East European National University (Lutsk)

**Abstract**

The interrelationship between language and culture is at the heart of linguistics and is reflected in the nature of the relationship. The cognitive linguistic approach is to acknowledge that culture-specific color concepts mediate color perception in a given culture and language and should be explicated from the natives' point of view. The main principle of color categorization is reference to exemplars, which may be explicit (e.g. *navy blue*) or implicit (*red* referring to blood and fire). Common referential exemplars are salient features of the environment (sky, vegetation, earth, etc.) and the human body. An analysis of the Ukrainian three color names for blue – *synii* 'blue, dark blue', *blakytnyi* 'sky-blue' and *holubiyi* 'light blue' – reveals the intricate ways in which this general mechanism may function. Color categorization is an area where a number of factors - genetic, neurophysiological, perceptual, cognitive, linguistic and, importantly, cultural – interact and overlap. Linguistic color categories emerge from people's interaction with the environment and are shaped by a specific linguistic-cultural tradition. The two-system model of color categorization recognizes that linguistic color concepts override perceptual color impressions.

**Keywords:** *cognitive linguistics, categorization, culture, color concept, color term, exemplar, blue*

The link between language and culture has intrigued and fascinated researchers in various fields for decades. At present, important advances are being made at the intersection of linguistics and cognitive studies. More specifically, researchers working within the framework of cognitive linguistics have approached some old and thorny problems in novel ways. In what follows, we will briefly look at the paradigmatic principles of cognitive linguistics that pertain to the interrelationship of language and culture and discuss the findings of categorization studies in this area.

Rebecca Frumkina made an insightful observation that in the history of humanities, including linguistics, two broad research paradigms alternate

over long periods of time: "*within one paradigm the researcher treats the object of study as if man is created by nature alone, while the other paradigm forces him to remember that man is formed by culture more than anything else*" (Frumkina, 1995, p. 104). This back-and-forth movement arises primarily due to the fact that researchers tend to focus their attention on one group of factors at the expense of others. Thus, it is important to adopt a balanced approach and endeavor to take all relevant factors into consideration. Cognitive linguistics is not a specific theory but rather a loose confederation of research programs united by a set of guiding fundamental principles, assumptions and theses. While it belongs to the functional approaches to language, cognitive linguistics stands out due to its overarching and comprehensive focus on the triad "human language – thinking – sociophysical experience" (Evans, 2012). From the cognitive linguistic viewpoint, the generic function of language is to perform operations with conceptualizations (Starko, 2014). Conceptualizations and the sociophysical experience are the areas where culture enters into consideration in the cognitive linguistic paradigm. This paradigm rests on two commitments first formulated by George Lakoff (1991): the *generalization commitment*, which instructs researchers to discover the general principles of human language as arising from overall cognitive abilities, and the *cognitive commitment*, which requires that explanations of linguistic facts agree with established findings about the way the human brain works. Vyvyan Evans (2012) formulated five fundamental theses that arise from these commitments and characterize the overall enterprise of cognitive linguistics: the thesis of embodied cognition, the thesis of encyclopedic semantics, the symbolic thesis, the thesis that meaning is conceptualization, and the usage-based thesis. Several of these pertain to the relationship between language and culture. The thesis of encyclopedic semantics refers to the relationship between semantic structure and conceptual structure, emphasizing that, through their semantics, linguistic units give access to (certain aspects of) conceptual representations that are encyclopedic in scope and nature. Conceptual representations are influenced by a variety of different factors, from the individual circumstances of the situation at hand to universal aspects of human cognition. Importantly, many conceptual representations are shaped by culture and some are culture-specific to a large degree. For example, *gray* can denote distinctly different color representations – cf. *gray cloud* and *gray hair*. The particular meaning of *gray* does not arise from a purely linguistic representation. Rather, it activates a relevant part of nonlinguistic and often culture-mediated or culture-specific encyclopedic knowledge.

The thesis that meaning is conceptualization is, it might be argued, revolutionary for semantics. It postulates that linguistically mediated meaning involves conceptualization some or most of which may be nonlinguistic in nature. On this approach, linguistic units serve as "prompts" for a number of cognitive operations and the recruitment of background knowledge, resulting in conceptualizations. This approach removes the artificial boundary between linguistic and nonlinguistic knowledge and opens the way to explaining how words convey thoughts. Language restricts the variability of conceptualizations and provides certain established models and ways of conceptualizing reality. These mechanisms are mediated and shaped by culture. Therefore, the paradigmatic principles underpinning cognitive linguistic research invite a full-fledged consideration of cultural factors.

Culture permeates language in different ways. One of the most conspicuous manifestations of the culture-language interrelationship can be found in culture-specific concepts. The study of key cultural concepts was made popular by Anna Wierzbicka (1997) and continues to flourish today in Central and Eastern Europe as can be seen from a rapidly growing body of research on this topic. Even roughly equivalent concepts in different languages exhibit some important culturally motivated differences (Starko, 2007). Exactly how much impact culture has on concepts and categories is still a matter of serious debate. However, the interesting, if not surprising, findings of recent research on color categorization shed new light on the age-old problem.

Color categorization is a battlefield of scientific theories despite a long history of intensive research. Two radically opposed approaches to color categorization can be formulated as follows: extreme universalism claims that because the biological makeup of human beings is the same, there are universal constraints imposed on color vision. Extreme relativism claims that color categorization is absolutely arbitrary in different cultures. Both extremes are recognized as wrong, but a search for a happy medium still continues. A more realistic model needs to acknowledge all relevant factors influencing color perception. What are these factors? First, there is the neurophysiology of color perception (Lee, 1999; Jameson, Highnote & Wasserman, 2001). As has been established, the perceived color space does not exactly match the signals received by the human retina, and certain emergent features arise at the stage of neural processing. Second, a person's genetics may lead to an enriched or impoverished color experience or cause anomalies or shifts in photoreceptor sensitivity. For example, in contrast with the majority of people, who have trichromatic vision, tetrachromats have additional perceptually salient segments of the spectrum – magenta, burgundy and salmon

colors (Jameson, Highnote & Wasserman, 2001). Third, there are important differences between scientific and naïve color categorization (Frumkina, 1984). For example, saturation is one of the scientific parameters of color, but it is a psychologically empty attribute: speakers either associate no specific sense with it or treat it as being equivalent to lightness. In naïve perception, brown is a separate, distinct color, whereas from the scientific viewpoint *brown* refers to any of a group of colors between red and yellow in hue, of medium to low lightness. Fourth, colors are rarely perceived in isolation and are processed together with other aspects of the situation. Color is perceived inseparably from its carrier. Fifth, communicative factors dictate, among other things, the choice of the categorization level: speakers may use such broad descriptors as *blue* or *green* or, if the circumstances so dictate (for example, when selecting wallpaper for their living room), can distinguish and describe subtle shades of colors.

The most intriguing issue, however, is the interplay of universal and culture-specific factors in color categorization. This question is at the heart of the debate between universalists and relativists. The paradigm of research into color categorization launched by Brent Berlin and Paul Kay (1969) strives to rely on "objective" means: a standard set of color chips which respondents are asked to name. Researchers then use these data to reconstruct color categories in a given language. However, this kind of behavioristic methodology tends to, in fact, ignore culture-specific color concepts that are sometimes drastically different from the basic set of English color names which are used as a benchmark. In contrast, relativists (or, rather, conceptualists) contend that it is precisely these color concepts that mediate color perception specific for a given culture and language. The principles of color categorization are contained in color concepts and should be explicated from the natives' point of view.

The universalist paradigm relies on an implicit assumption that the conceptual domain of color is universal. However, linguistic data show that color is not a universal concept. There are languages that do not have a general lexicalized concept of color. Others may refer to color always in conjunction with other aspects of the situation or make no reference to hue (Wierzbicka, 2006). These languages use visual descriptors (similar to the English *light* and *dark*) rather than color names. Speakers of languages that are indifferent to color distinguish colors perceptively (possess the perceptive domain of color) but lack a corresponding conceptual domain.

The universalist approach is also vulnerable to accusations of Anglocentrism (Lucy, 1997), (Wierzbicka, 2006). Anna Wierzbicka correctly observes

that universalists express complex indigenous color concepts through combinations of English color names and inevitably run into some "inconvenient" facts. For example, Hungarian color names *vörös* 'dark red' and *piros* 'light red' cover the range of the English *red*, but Hungarian does not have a unified concept of red. Thus, it appears that Munsell color chips are not culture-independent physical stimuli but represent culture-specific color concepts.

The main principle of color categorization (and, more broadly, visual categorization) is the reference to exemplars. The majority of color names are relative and refer to vehicles of a certain color, for example, *silver* and *navy blue* in English, *voloshkovyi* 'cornflower blue' and *malynovyi* 'the color of raspberry' in Ukrainian, *cytrynowożółty* 'lemon yellow' and *pomarańczowy* 'orange' in Polish. In these cases, exemplars – variously called prototypes, referential exemplars and points of reference – are explicitly mentioned in the color names. Their choice is a function of language and culture and to a large extent defines the system of color names in a particular language.

In contrast to the examples above, the link to a referential exemplar may be implicit rather than explicit. For example, according to Wierzbicka, the referential exemplars of *red* in English are blood and fire. The former accounts for the darker shades of red, while the latter for the lighter ones. Furthermore, the conceptual links are established with an entire situation and its various aspects (such as the embers and flames of fire in the case of bright red). In general, color names and their referential exemplars are in a many-to-many relationship: one exemplar may serve as a point of reference for multiple color names, while one such name may rely on various exemplars.

Another universal tendency is that all languages differentiate between high/low visibility, or daytime vision and night-time vision (Wierzbicka, 2006). This is a distinction that is evidenced, for example, by the pair *light* and *dark* in English and words that designate lighter and darker shades of colors. Moreover, it appears that all languages have visual descriptors referring to some features of the natural environment. The features may differ, but the sky, vegetation, the earth and snow (in some areas) are widespread points of reference. There are also local, culture-specific referential exemplars, such as visually salient minerals, pigments (especially those that are important in a given culture and are used for painting, dyeing, etc.) and local environmental features. The human (and sometimes animal) body is also widely used as a reference point. Blood, human hair, skin and eyes are the referential exemplars for many color names across the world's languages. If a color name is restricted only or mostly to certain objects, this is evidence that the latter serve as referential exemplars. For example, *blond hair* and

*hazel eyes* in English, *syve volossia* 'grey hair' and *kari ochi* 'hazel eyes' in Ukrainian, *piwne oczy* in Polish. Thus, color categorization appears to rely, to a large extent, on salient environmental and bodily referential exemplars recurring in human experience.

This mechanism may function in a fairly sophisticated way, as research into the Ukrainian color names *synii* 'blue, dark blue', *blakytnyi* 'sky-blue' and *holubyi* 'light blue' revealed. Together, they cover the range of the English *blue* but individually divide it into distinct, albeit overlapping, segments (Starko, 2013). An analysis of the results of two psycholinguistic experiments and corpus data shows that these color names share several points of reference but are linked to them in different ways and to varying degrees. The primary referential exemplars for all three are the sky (by far the most salient exemplar), a vast expanse of air (such as observed by a person gazing into distance) and bodies of water (rivers, lakes and the sea). While *blakytnyi* often refers to the sky brightly illuminated by the sun (as on a very sunny day), *holubyi* is associated with the sky that is clear. This fine difference may often disappear, and the two words can be used interchangeably. Nevertheless, for very light shades of blue *blakytnyi* is a somewhat more likely choice than *holubyi*. This can be explained by the fact that the two words are associated with sunlight to different degrees. *Synii* is more flexible than the other two color names in terms of constraints placed on lighting conditions and vantage points. Whether it refers to the sky, an expanse of air or other objects, it is used in situations of both broad daylight and low light. This explains the wider referential range of *synii* as compared to the other two color names. There are also auxiliary reference points. For example, a cold shade of light blue is characteristic of smoke, haze, fog and mist as in the Ukrainian phrase *blakytnyi dymok smerkannia* 'the light-blue smoke of the twilight'. Interestingly, the Ukrainian national flag is becoming increasingly prominent in the linguistic consciousness of native speakers as a possible auxiliary reference point for *blakytnyi* and, to a smaller degree, for *synii*.

It is crucial to distinguish the societal (ethnic cultural) level and the individual level of categorization. The above observations describe a fragment of the national categorization network. At the individual level, salient color exemplars may be different. For example, Ukrainians living by the sea would more often refer to this object as a prominent exemplar. Other objects recurring in a person's individual experience may be employed as reference points. Some of these are reflected in traditional similes, such as the Ukrainian *holubyi iak l'on* 'light blue as flax' or *synii iak voloshky* 'blue as cornflowers'. Meanwhile, the points of reference at the ethnic cultural level ensure suffi-

cient unification and stability of color nomination, while preserving a degree of flexibility in the language community.

In summary, the referential mechanism of the Ukrainian color concepts for blue turns out to be more nuanced than suggested by previous research. While the sky is by far the most dominant reference point for all three color terms, they are also linked to multiple auxiliary exemplars, while the circumstances of observation, notably sunlight and lighting conditions in general, play a crucial part, particularly when reference is made to the same object.

Returning to the universalism vs. relativism debate, it appears that a truly Solomonic compromise is emerging here. Regier and Kay (2009) established that linguistic color categories affect color categorization in the right, but not left, visual field. It appears that we use two different color processing systems – perceptual and linguistic. This finding is also accepted by researchers who have adopted the position of moderate relativism (Roberson & Hanley, 2009). Under normal circumstances, both systems operate in parallel, but the linguistic color processing system overrides its perceptual counterpart and sets the visual parameters entrenched in a specific language and culture. If, however, subjects are given an intensive verbal processing task, they are forced to rely on the perceptual system only. There is no doubt that linguistic color concepts affect color categorization, but it remains to be seen whether there are also pre-linguistic, "perceptual categories" of color.

In conclusion, color categorization is an area where a number of factors – genetic, neurophysiological, perceptual, cognitive, linguistic and, importantly, cultural – interact and overlap. Color categorization studies need to recognize the interplay of these factors and seek to reveal ways in which culture influences language and cognition. Linguistic color categories are not an "objective" reflection of a fragment of external reality. Rather, they emerge from people's interaction with the environment and are shaped by a specific linguistic-cultural tradition. Human beings use two color processing systems – linguistic and perceptual. The culture-mediated linguistic system overrides the perceptual system under normal circumstances. The two-system model of color categorization recognizes the predominant role of linguistic color concepts and makes an important contribution to the universalism vs. relativism debate. Research on categorization reveals intricate interrelationships between language and culture.

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