

Ukrainian Colour Concepts for Blue

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Abstract.

A much-studied area, colour categorization has received renewed attention in cognitive linguistics. A promising line of research is the reconstruction of colour concepts. Specifically, the goal is to discover points of reference used by a linguistic community for different colours. The colour system of Ukrainian is special in that it has as many as three basic words (*synij*, *blakytnyj* and *holubyyj*) for what is generally called *blue* in English. This paper analyzes experimental and corpus data and offers a reconstruction of their referential models. The Ukrainian colour names under study are shown to have a dominant reference point (a clear sky for all three words) and secondary ones. Relevant aspects of typical observation situations and other contributing factors are discussed.

1. Background

Since the publication of the seminal work (Berlin & Kay 1969), the domain of colour names has become the most intensively studied area of natural language categorization. Researchers of colour categorization have generally split into two camps. Objectivists maintain that to establish the meaning of colour terms, we need to specify the segments of the visible spectrum that they pick out. The relation between a colour name and the range of light frequencies it designates is ultimately conditioned by objective factors, such as human biological makeup. In contrast, relativists, or more exactly conceptualists, are convinced that the semantics of colour resides in the corresponding concepts employed in language and cognition. To the extent that these concepts are linguistically and culturally specific, colour concepts are relative. The study of colour concepts involves discovering points of reference (or exemplars, or prototypes) that largely define the range of colour categories.

In the past years, it has become increasingly obvious that a number of factors, rather than just one, contribute to colour categorization (Starko 2013a): Genetic factors that

affect the human perceptual apparatus, existing colour categories in a given language (the source of categorical perception in colour categorization), communicative factors and context. Moreover, colour is not independent of other aspects of observable situations, and the domain of colour is not universal – some languages do not have a lexicalized concept of colour, employing visual descriptors (similar to *light* and *dark*) instead. There is growing evidence for bilateral, dual-system processing of colour with the right hemisphere handling colour based on universal biological principles (perceptual processing) and the left hemisphere, which ultimately prevails, being guided by linguistic categories of colour (linguistic processing).

In this light, reference points for colour names emerge as an important, but not unique, guiding principle of colour categorization. They are especially useful in accounting for the range of colour categories – counterpart words for colours in different languages are known to differ in their range, which cannot be explained merely by biological conditioning. In addition, reference points provide a foundation for the commonality of colour designation within a linguistic community by virtue of being part of the environment shared by its members.

Several different sources of data are used to discover reference points for colour names: lexical collocation patterns (Javorska 1999; Javorska 2000; Starko 2013c), free association experiments (Martinek 2005; Martinek 2006; Starko 2013b) and trained introspection (Wierzbicka 1996; 2006; 2008). All of these have been utilized in the present study.

2. Earlier related studies of colour categories

Conceptual analysis aimed at discovering reference points for colour names has been prominently advocated by Anna Wierzbicka and pursued in studies of different languages. According to Wierzbicka and her followers, reference points serve as explicit or implicit guides for colour discrimination. Most of them are culturally salient natural objects or artefacts, and references to them can explain not only the range of a colour name, but also the associated connotations and at least some metaphorical uses. The idea that colour terms refer to exemplars was put forward long before the arrival of cognitive science. For example, as Afanasij Krytenko (Krytenko 1963) argued, blood and fire are the reference points for the red colour in Ukrainian as relatively stable “carriers” of this colour because of their psychological salience and importance in human activities.

Wierzbicka analyzed a number of colour names for various blues in different languages, arguing that all of them refer to the sky, but each in its own way (Wierzbicka 1996:309–314). The Polish *blekitny* is most closely associated with the colour of the sky. The connection is weaker in the case of the Polish *niebieski* and weaker still for the English *blue*, which has, according to Wierzbicka, an additional

reference point in a large body of water, such as the sea or a lake, observed from afar. The focal shade of *blue* is darker than sky-blue and lighter than the blue of the sea, which leads Wierzbicka to surmise that this may be caused by human neurophysiology. Nevertheless, the range of the colour category is still language-specific.

Russian has two “basic” words for *blue*: *goluboj* ‘light blue’ and *sinij* ‘blue, dark blue’. Wierzbicka links the former to the sky observed in broad daylight and treats the latter as possibly referring to the colour of the sky, but not on a sunny day and sometimes in the absence of full sunlight, thus accounting for darker blues. *Sinij* is defined as “darker” but not “dark”, which sets it apart from the Polish *granatowy* ‘dark blue’. According to Wierzbicka, the English *blue* may be associated with the sky, but its relation to the colour of the sky on a sunny day is unspecified. Wierzbicka discovers these fine details largely by relying on trained introspection and an “informal” survey of native speakers. Her research is thought-provoking and calls for further elaboration and verification by textual data.

The Ukrainian words for blue have been studied from different angles (Bjelajeva 2005; Čykalo 1997; Javorska 2000; Martinek 2005; Popovic 2007). In particular, Galina Javorska has attempted to tease out the differences between *blakytnyj* ‘light blue’, *holubij* ‘light blue’ and *synij* ‘blue, dark blue’ by analyzing their collocation patterns and using introspection. She argues (Javorska 2000) that *synij* has a dominant reference point (the sky) and a secondary one (the sea); *holubij* has prototypical reference to natural bodies of water and secondary to the sky, while *blakytnyj* is associated with the colour of the sky on a sunny day. She maintains, but does not provide any textual evidence, that *blakytnyj* and *synij* refer to bodies of water as viewed from an elevated distant vantage point. The typical connotations of *holubij* (sorrow, grief, nostalgia and cold) can, Javorska argues, be neatly explained by its prototypical reference to water. Her insightful reconstruction is based, however, on what appears to be fairly limited textual data and requires verification. Crucially, both Wierzbicka and Javorska seek to reconstruct entire reference models which may contain multiple reference points (dominant and auxiliary) and additional information, such as circumstances of observation.

Categorical perception has been observed in colour categorization involving the Russian words *goluboj* and *sinij* but not the English *blue*, which proves that Russian has two distinct colour categories for blue (Winawer et al. 2007). This finding agrees with a number of other linguistic and psycholinguistic studies (Frumkina 1984; Paramei 2007). While no such research has been done specifically on the aforementioned Ukrainian terms for blue, it is safe to assume that they, too, are basic and distinct colour categories. In the linguistic consciousness of Ukrainian speakers, neither of them has an explicit exemplar (unlike, for example, *jade* or *lemon* for native speakers of English). Therefore, our goal is to uncover the implicit reference model

that contributes to the categorization of the blue part of the colour spectrum in Ukrainian. We will start with data generated by free association experiments.

3. Experimental data

For the purposes of our study, we have used *Ukrain'skyj asociatyvnyj slovnyk* ‘A Ukrainian Associative Dictionary’ (Martinek 2007). It presents the results of free association experiments involving 100 men and 100 women. Each group provided some 100 reactions to each stimulus. We have grouped reactions based on the object they refer to. For example, *nebo* ‘sky’ (noun), *nebesnyj* ‘sky’ (adjective) and *jak nebo* ‘as the sky’ all refer to the same object. Percentages indicate the proportion of a group of reactions relative to the total number of reactions evoked by a particular stimulus. Individual lexemes are italicized, while names of groups of reactions are in regular font. The arrow sign shows the direction of reaction. For example, *synij*→*voda* indicates that *voda* ‘water’ is a reaction to the stimulus word *synij*, while *holubyj*→*nebo* marks a group of lexically different reactions associated with the sky and evoked by the word *blakytnyj*.

Associations with the sky form the biggest group for the stimulus word *blakytnyj*: *blakytnyj*→*nebo* 38%. Another stimulus word, the noun *blakyt'* ‘light-blue colour’ has an even stronger connection with this reference object: *blakyt'*→*nebo* 66%. A similar situation is with the stimulus *holubyj*: *holubyj*→*nebo* 26%. Associations with the sea and water are minimal (up to 1.5%). *Synij* is also primarily associated with the colour of the sky: *synij*→*nebo* 20%, *synjava* ‘blue colour’→*nebo* 29%. Associations with the sea account for 2.4% and other bodies of water for 2.8% of the total. Reactions such as *temnyj* ‘dark’, *čorne* ‘black’, *nič* ‘night’, etc. clearly point to darker shades of blue designated by *synij*.

As can be seen, the sky is the dominant association for all three colour terms under study. By taking only the main stimuli (*blakytnyj*, *holubyj* and *synij*) and analyzing the reactions that pertain to the sky, it is possible to assess the “contribution” made by each lexeme to the description of the sky as a blue object. The proportions are as follows: *blakytnyj* 47%, *holubyj* 30% and *synij* 23%.

Experimental data reveals fairly stable associations with the colours of the Ukrainian national flag. The flag is popularly known as *žovto-blakytnyj* ‘yellow-and-blue’, but the colour of the upper strip is officially defined in the Constitution as *synij* and variations from light blue to navy blue can be observed in reality. Unfortunately, the dictionary (Martinek 2007) does not include the stimulus word *prapor* ‘flag’. Thus, our attention is limited to the following pairs: *blakytnyj*→*prapor* 4.4%, *holubyj*→*prapor* 2% (a reference to the flag of one of Ukrainian political parties) and *synij*→*prapor* 2.8%. It appears likely that the Ukrainian flag serves as an additional

reference point for *blakytnyj*. However, more and better experimental data is needed to ascertain this fact with complete certainty.

As an auxiliary source, we have used an associative dictionary of Ukrainian (Butenko 1979). It employs a different methodology, is significantly removed in time and, unfortunately, does not contain the stimulus word *holubyj*. However, more than 900 reactions were collected for each stimulus listed, which allows for a much more detailed snapshot of linguistic consciousness. Naturally, any associations with the Ukrainian national flag (banned in Soviet times) could not find their way into a dictionary published in 1979 in L'viv. Data from this source generally confirms that the sky is the dominant reference point: *blakytnyj*→*nebo* 30% and *synij*→*nebo* 7%. We have also identified other probable auxiliary reference points, including air filling the expanse between the earth and the sky (e.g., *blakytnyj neboschyl* 'light-blue horizon'), air saturated with moisture or having diminished transparency (e.g., *synij tuman* 'blue fog') and objects issuing or reflecting cold bluish light (e.g., *synij inij* 'blue hoarfrost'). Their contribution to the experimental data was much less significant than that of the dominant reference point. They will be discussed in more detail in the next section.

4. Corpus data

Textual data for our research comes from the online Corpus of the Ukrainian Language (CUL).¹ While still a work in progress, it puts at the disposal of scholars studying Ukrainian a much bigger amount of POS-tagged text than they have ever had before. The corpus consists of four subcorpora (imaginative prose, poetry, informative prose and folklore) of which the first one is the biggest and most important for our study. Data from the other subcorpora has been occasionally used to supplement the main findings.

For the purpose of discovering fixed associations with possible reference points, a fixed procedure was followed. First, all occurrences of the colour names in question were retrieved. Then they were grouped into classes based on the type of objects referred to, such as the sky, bodies of water, etc. Importantly, the grouping was based on a conceptual criterion, i.e., instances of words co-occurring with colour names were grouped together as long as they pointed to the same referent, even though they could be quite different at the lexical level. Frequency analysis was then used to determine the most prominent reference points. (In what follows, percentages indicate the proportion of one group of contexts relative to the absolute frequency of a colour name in the subcorpus of imaginative prose.) Further lexical analysis revealed the circumstances of prototypical visual situations, as well as connotations and

¹ The corpus is available at <http://www.mova.info/corpus.aspx> and contains around 13 million tokens, according to the information published on the website.

metaphorical uses. Finally, the entire reference model for each colour word was reconstructed based on the corpus data.

4.1 *Blakytnyj*

The colour name *blakytnyj* occurs 530 times in the subcorpus of imaginative prose, and its most frequent association is with the colour of the sky (11%). Unlike experimental data and, to a large extent, introspection, corpus data makes it possible to single out typical circumstances in which a particular referent of a colour name is observed. For *blakytne nebo* ‘light-blue sky’, one distinct attending circumstance is bright sunlight:²

- (1) Сонце весело сміялося з неба золотим сміхом. Біленькі хмарки пливли по блакитному морю, купаючися в теплому світлі. (Boris Hrinčenko, “Pid tychymy verbamy”)
- (2) The golden sun smiled joyfully from the sky. Little white clouds drifted across the light-blue sea of the sky, bathing in warm light.

Since Byzantine times, light blue was used as the colour of heaven in painting church domes, icons, etc. Evidence from the corpus suggests that this link is still preserved (2%):

- (3) Ворон її [церкву] пам’ятає ще дерев’яною із блакитними банями у срібних зорях. (Vasyl' Škljar, “Zalyšenec”)
- (4) The raven remembers it [the church] still as a wooden construction with light-blue domes sprinkled with silvery stars.

A mass of air between the earth and the sky, especially if perceived by an observer looking into the distance, is categorized as *blakytnyj* in the presence of sufficient sunlight (3.5%):

- (5) Він вийшов з церкви, заплющився від яскравості блакитного київського дня. (Pavlo Zahrebel'nyj, “Dyvo”)
- (6) He came out of the church and had to close his eyes as he stepped into the brightness of the light-blue Kyiv day.
- (7) Тут тихо, просторо, блакитні обрії видно, далеко озера сяють на сонці плесами. (Oles' Hončar, “Sobor”)
- (8) It is quiet here and there is plenty of space; you can see the light-blue horizon, and the open stretches of distant lakes glisten in the sun.

While *blakytnyj* rarely refers to the sea (1%), it is used to describe the colour of water and such water objects as lakes, rivers, channels, waves, etc. (4%):

- (9) Сергій зятято працював жердиною, прямуючи до похмурого бескеття, що зубом уп’ялося в блакитну гладінь озера. (Ivan Bilyk, “Tanho”)

² In the examples provided in this article, the original is listed first and a translation made by the present author follows. All examples were drawn from the Corpus of the Ukrainian Language.

- (10) Serhij stubbornly worked the pole, steering towards the gloomy cliffs stuck, as teeth, into the light-blue glassy surface of the lake.

Blakytnyj also occurs with a series of lexemes denoting objects that reflect or issue cold bluish light (3%), such as lightning, snow, the moon, stars, sparkles, etc.:

- (11) Ніколи не торкнуться їхньої уяви веселі наші дощі над степом, і зими в блакитних снігах... (Oles' Hončar, "Tvoja zořja")
(12) Their imagination will never be stirred by our merry rains in the steppe and by winters wrapped in light-blue snow...

A cold shade of light blue is also characteristic of smoke, haze, fog and mist (2%):

- (13) Підвівся, коли крізь блакитний димок смеркання побачив, що він іде. (Mykola Bařan, "Majster zaliznoї trojandy")
(14) I rose to my feet when I discerned through the light-blue smoke of the twilight that he was coming.

The association with heavens as the abode of God and human souls after death and the correlation with warm light explain the prevalence of positive connotations:

- (15) Мала вона світле довге волосся, що вкривало її наче плащ, блакитні очі сяяли, наче джерела, освітлені сонцем. (Jurij Vynnyčuk, "Krasunja zi studni")
(16) She had long fair hair that covered her like a coat; her light-blue eyes shone like springs lit by the sun.

4.2 *Holubyj*

In imaginative prose, the most salient point of reference for *holubyi* is the clear sky (10%):

- (17) Ось вже і небо голубе і чисте, і вода голуба, просвітчаста. (Marko Vovčok, "Try doli")
(18) Now the sky has already become light blue and clear, and the water is light blue and transparent.

Naturally occurring bodies of water make up the next most significant point of reference (6%). Contexts often refer to sunlit, limpid water:

- (19) Той Дунай, про який ми стільки передумали, — чистий, голубий від неба... (Oles' Hončar, "Holubyj Dunaj")
(20) That Danube River, about which we had thought so much, was pure, light blue from the sky...

Only three contexts containing *holube more* 'light-blue sea' appear in the subcorpus of imaginative prose. Next by the order of frequency is a heterogeneous group of objects reflecting or issuing cold light (5%):

- (21) Щозими, шугаючи в снігах з запаленою звільдою вгорі, несли ми крізь ніч голубу до знайомих тополь свою колядницьку радість... (Oles' Hončar, "Твоја зорја")
- (22) Every winter, as we dashed on the snow with a shining star up above, we the carollers carried our joy through the light-blue night to the familiar poplar trees...

A group of expressions designating a light-blue shade of fog, haze, smoke, etc. accounts for 4% of all occurrences:

- (23) У жаркому голубому мареві бовваніли шпилі високих будівель... (Oles' Berdnyk, "Podvyh Vajvasvaty")
- (24) The spires of high buildings loomed out of the hot light-blue haze...

Somewhat less frequent (3%) are contexts referring to a mass of air that produces the visual effect of light blue:

- (25) Голубі хвилі чистого повітря спадали із зелених схилів... (Roman Ivanyčuk, "Manuskrypt z vulyci Ruskoї")
- (26) Light-blue waves of clear air rolled down the green slopes...

Thus, the predominant point of reference for *holubyj* is the sky (10%). While *blakytnyj* often refers to the sky brightly illuminated by the sun (as on a very sunny day), *holubyj* is associated with the sky that is clear. This fine difference may often disappear altogether, and the two words can be used interchangeably. Nevertheless, for very light shades of blue *blakytnyj* is a somewhat more likely choice than *holubyj*. This can be explained by the fact that the two words are associated with sunlight to different degrees.

Connotations of *holubyj* in imaginative prose include peace, pensiveness and nostalgia:

- (27) Передосінне небо повите було в голубу задуму. (Stepan Vasylčenko, "Šyrokyj šljach")
- (28) The pre-autumnal sky was enveloped in light-blue thoughtfulness.

Holubyj is hardly ever associated with heaven. The connotations of tranquillity and peacefulness are due to the association with the sky. The negative connotations of pain, sorrow, anxiety, etc. (in the subcorpus of poetry) have a subdued, rather than violent, character and do not appear to be linked to any reference points of *holubyj*. In contrast, *blakytnyj* has almost exclusively positive connotations and associations with heavenly things, all motivated by a strong association with the sky as seen in broad daylight. *Holubyj* also reveals a distinct connotation of nostalgia, but it is not, pace Javorska (Javorska 2000), linked to water. In all such contexts, expressions conveying a nostalgic feeling relate the idea of a speaker looking back at his childhood years as if gazing into the distance, which suggests the reference point we have described as a vast expanse of air between the sky and the earth:

- (29) А як розплющував очі — перед ним гойдалося голубе марево. Те саме марево, знане з дитинства, що таким чудовим може бути лише в його рідних степах. (Ivan Bahrjanyj, “Ljudyna, ščo bižyt' nad prirvoju”)
- (30) And when he opened his eyes, a light-blue mirage was swaying in front of him. It was the same mirage he knew well from his childhood years, the mirage that can only be so wonderful in his native steppes.

4.3 *Synij*

Synij is the most frequently used of the three colour terms under study and occurs 1,090 times in the subcorpus of imaginative prose. The sky is, again, the dominant exemplar (12%). However, contexts illustrate distinctly different circumstances of the visual situation in which *synij* can designate lighter and darker shades of blue. *Synje nebo* ‘blue sky’ may be bright, unclouded, clear, sunlit and saturated. For example:

- (31) Ясно сонце світить, небо безкрайне та синє... (Stepan Vasylčenko, “Šyrokyj šljach”)
- (32) The sun is shining brightly; the sky is boundless and blue...
- (33) Сліпуче синє небо серпневе — аж у вічню боляче! (Ivan Bahrjanyj, “Sad hetsymans'kyj”)
- (34) The blue August sky is so dazzling that the eyes are hurting!

At the same time, the sky is perceived as *synje* when there is less or even minimal light, such as at dawn, in the twilight or at night. In these cases, *synij* designates a much darker blue and may even come close to black at night:

- (35) А тут саме повз неї проходила Серпнева Ніч – висока темноволоса пані в розкішній синій, мов нічне небо, сукні. (Jurij Vynnyčuk, “Pro malen'ku žnycju ta serpnevu nič”)
- (36) And just at that moment, August Night was passing by her – a tall, dark-haired lady in a luxurious dress, blue as the night sky.

The collocation *synje more* ‘blue sea’ occurs only 25 times (2.3%) and some contexts are reminiscent of folklore:

- (37) На півдні небо з морем разом живе — обоє сині, одне синіше від другого... (Roman Ivanyčuk, “Mal'vy [Janyčary]”)
- (38) In the south, the sky lives together with the sea – both are blue, one bluer than the other...

Designations of bodies water and water as such are quite significant (4.7%) and together with the sea (7%) constitute an important component of the referential model of *synij*. Interestingly, rivers are described using this colour term almost as often as the sea. Examples provided below show that the circumstances of the referential situations can vary greatly:

- (39) ...синій Дніпро попід горою... (Marko Vovčok, “Devjat' brativ i desjata sestrycja Halja”)

- (40) ...the blue Dnieper river at the foot of the hill...
- (41) Всюди чисто замечено, пульсують сині фонтани, незрушно стоять пальми з важким листом. (Oleksandr Zyma, “Den' na rozdumy”)
- (42) The area all around is swept clean; blue fountains are pulsating; palm trees with heavy leaves are standing still.
- (43) А далі починалось озеро. Його синя широчінь ледь мережилась дрібненькими жмурами, палаючи під скісними променями сонця... (Ivan Bilyk, “Tanho”)
- (44) And then the lake began. Fine ripples ran across its blue expanse, glowing in the oblique rays of the sun...
- (45) Якийсь час тіло його борсатиметься, руки й ноги хапатимуться за синю воду, тобто за ніщо. (Ivan Bilyk, “Zolotyj Ra”)
- (46) For a while, his body will throw itself right and left; his hands and feet will be trying to catch hold of water, i.e., of nothing.

As the above examples illustrate, a body of water can be perceived as *synij* if observed from an elevated point with the gaze directed downwards in full daylight, or the observer may be standing on a bank looking at it in the evening sunshine. The fountains in example (41) are fairly close to the speaker. In the last example above, the speaker himself is in the water. It can safely be concluded that *synij* is more flexible than the other two colour terms under study in terms of constraints placed on lighting conditions and vantage points.

This is borne out by examples in the category “expanse of air” (5%) which attest situations of broad daylight (2%) and low light (3%):

- (47) Ї за Дніпром гори: близькії — одна над одною зеленіш, далекії — одна над одною синіш. (Marko Vovčok, “Devjat' brativ i desjata sestrycja Halja”)
- (48) There were hills beyond the Dnieper: the closer ones ever greener and the distant ones ever bluer.
- (49) Він пристав був до вільних рибалок і виходив з ними синіми ранками на тунця. (Ivan Bilyk, “Zolotyj Ra”)
- (50) He joined free fishermen and went to sea with them to catch tuna fish on blue mornings.
- (51) А почалося все синього зимового вечора. (Natalja Hajdamaka, “Reanimacija-XXI”)
- (52) It all began on a blue winter evening.

Objects with bluish light or shine form a fairly small group (2%), while haze, fog, etc. account for 3%:

- (53) В синьому промені місяця стояло це химерне приладдя, як якесь середньовічне диво. (Stepan Vasyľchenko, “Olyvjanyj persten”)
- (54) In the blue light of the moon, this chimeric contraption stood as a kind of medieval wonder.
- (55) Над долиною впав синій серпанок. (Oles' Berdnyk, “Marsians'ki ‘zajci’”)
- (56) A blue mist came down on a valley.

Nostalgia is the most salient connotation of *synij*. Nostalgia and dreaminess are linked to the situation when an observer is gazing into the distance, while cheerfulness is associated with the appearance of the bright blue sky:

- (57) Біля самого ліжка на тумбочці стояв маленький кошик з свіжими синіми квітами, схожими на проліски. ... Власне дитинство майнуло йому синім крилатим майвом, залопотіло босоніж в замиські гаї ... (Oles' Hončar, “Praporonosci”)
- (58) On a bedside table stood a small basket with fresh blue flowers that looked like snowdrops... He flashed back to his childhood years, to the blue waves of winged flowers, to the barefoot dashes into out-of-town groves...
- (59) В життерадісно синьому небі хмари пливли повільно і поважно, несучи в собі дорогоцінний вантаж животворної вологи. (Mykola Daškijev, “Toržestvo žyttja”)
- (60) In the cheerful blue sky, clouds flowed slowly and stately, carrying the precious load of life-giving moisture.

5. Discussion and conclusions

The table below summarizes the experimental and corpus data analyzed. It should be noted that in the experimental data, reactions to *synij* pointing to “other bodies of water” largely refer to rivers and oceans: *synij*→ocean ‘ocean’ 2.2%, *synij*→rika ‘river’ 1.2% (Butenko 1979), *synij*→ocean 2.4% (Martinek 2007). In the corpus, rivers predominate in this group (1.7% out of 4.7%).

Reference point\Colour	<i>blakytynyj</i>			<i>holubuj</i>		<i>synij</i>		
	AE07	AE79	Corpus	AE07	Corpus	AE07	AE 79	Corpus
sky	38	30	11	26	10	20	7	12
expanse of air	3	9,3	3,5	1,5	3	6,3	7	5
sea	–	2,6	1	1,5	1	2,4	2,2	2,3
other bodies of water	1,5	0,6	4	1	6	2,8	4,2	4,7
cold light	0,5	1,3	3	0,5	5	4,3	5,1	2
haze		0,2	2		4	2	0,7	3
Ukrainian flag	4,4	2,5				2,8	0,3	

Table: Summary of data on reference points, in %.

Data from three different sources used in our study is highly consistent in the large. The sky is by far the most dominant reference point for all three colour terms, while other objects serve as auxiliary points of reference in the overall model. Remarkably, it turns out that one natural object, whose colour is not even stable, is the primary

implicit reference source for as many as three basic colour terms. Here the circumstances of observation, especially the connection with sunlight, become much more significant. Another important aspect is the need to distinguish between entrenched designations and prototypical sources of colour information. For example, “expanse of air” and “bodies of water” are permanent elements of the environment in which Ukrainians live, much more so than “the sea”. Thus, the former elements can be viewed as reference points facilitating colour categorization, while the latter is merely a typical referent. This is a distinction between a source of colour designation and a common application of a colour name.

We came to the conclusion that the group “objects issuing or reflecting cold light” could hardly be considered a source for colour categorization, because it is excessively heterogeneous and no member of this group has emerged in our analysis as a stable point of reference. In contrast, the “haze” group is much more homogeneous and can perform an auxiliary function. Finally, the light-blue colour of the upper stripe of the Ukrainian national flag is becoming increasingly prominent in the linguistic consciousness of native speakers as a possible auxiliary reference point.

The above considerations pertain to a fragment of the national categorization network. At the individual level, salient colour exemplars may and will be different. For example, Ukrainians living by the sea will more often refer to this object as a prominent exemplar than Ukrainian speakers who reside far from the seaside. Other objects, not included in the model, may well be employed as reference points, at least at certain stages of a person’s development. Some of these are reflected in traditional similes, such as *holubyy jak l'on* ‘light blue as flax’ or *synij jak vološky* ‘blue as cornflowers’. At the same time, the reference points described above ensure sufficient unification and stability of colour nomination, while preserving a degree of flexibility in the Ukrainian-speaking community.

Sociolinguistic factors may also be at play in colour categorization. For example, speakers of Ukrainian perceive *blakytynyj* as a purely Ukrainian word, even though it was borrowed from Polish, and *holubyy* as a Russianism – because it is very close to the Russian counterpart *goluboj* and despite the fact that it has longer history of use in Ukrainian (Javorska 2000). These considerations prompt many speakers to prefer the former lexeme over the latter. In addition, *holubyy* is a common designation of homosexual men and is often avoided for fear of unwanted associations, which is similar to the situation with the English *gay*, which stopped being used in the traditional senses ‘carefree’ or ‘bright and showy’.

In conclusion, it needs to be stressed that the reference models of *blakytynyj*, *holubyy* and *synij* are more nuanced than suggested by previous research. While the sky is by far the most dominant reference point for all three colour terms, their reference models include multiple auxiliary exemplars. Not only particular objects but also circumstances of observation – notably sunlight – play a crucial part. Further refinement of

the models will be possible when more linguistic data becomes available, but convergent data from several independent sources already ensures a high degree of validity.

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