Coding colours: Differences across languages and their consequences for translation and language teaching

MARTA BIESZK


Abstract

The concept of colour occurs in every language of the world, but contrastive research shows that the names of individual colours, functioning in one of the compared languages, do not have unambiguous equivalents in the other. The problems of the linguistic expression of colours in different languages, the history of colour terms, the formation of the semantic field of colour names and the semantics of individual words referring to colours have been investigated by numerous scholars. This paper focuses on analysing the consequences of the different organisation of the semantic field of colour for the translation from one language into another, as well as for foreign language teaching. The consequences presented here concern Polish and German mainly, but other Indo-European languages are also taken into consideration.

Keywords

colour vocabulary, translation, language teaching
Kodowanie kolorów: 
Różnice między językami i ich znaczenie w tłumaczeniu i nauczaniu języków

Abstrakt

Pojęcie koloru występuje w każdym języku świata, ale badania kontrastowe wykazują, że nazwy poszczególnych kolorów, funkcjonujące w jednym z porównywanych języków, nie mają jednoznacznych odpowiedników drugim. Problemom językowego wyrażania wartości barwnych w różnych językach, historii nazw kolorów, kształtowaniu się pola semantycznego nazw barw oraz semantyce poszczególnych wyrazów ze znaczeniem koloru poświęcono wiele prac językoznawczych. Niemerszy artykuł koncentruje się na analizie konsekwencji różnej organizacji pola semantycznego kolorów dla przekładu z jednego języka na drugi, a także dla nauczania języków obcych. Konsekwencje te unaczynione zostaną głównie na przykładach z języków polskiego i niemieckiego, uwzględnione zostaną jednak także inne języki indoeuropejskie.

Słowa kluczowe

słownictwo barw, przekład, nauczanie języka

1. Introduction

Although basic colour terms belong to lexical universals (see e.g. Tabakowska 2001: 181), different languages have different ways of organising the semantic field related to naming colours. The differences concern both the number of lexemes included in this field and the portions of the colour spectrum referred to by these lexemes, which makes colours one of the standard examples supporting the Sapir-Whorf hypothesis. This hypothesis states that the language we use affects our perception and conceptualisation of the world to a greater or lesser extent. Therefore, colour terms, their perception, decoding and interpretation become an interesting field of linguistic research. This issue was
addressed in the 1960s by Berlin and Kay, who comparatively analysed the systems of different languages (Berlin and Kay 1969). Their research led to the first version of the theory of colour universals, which is still being developed and modified today, with new findings in neuropsychology and linguistics taken into consideration. A modified version of the theory from 1978 states that colour categories are based on certain focal colours which indisputably belong to a given category and those which are further from the prototypes. The further they are, the harder it is to classify them. Therefore, the boundaries of a given category are not fixed but rather delineated subjectively by different people. According to Leeuwen (2001), as well as Stanulewicz and Danilewicz (2016), colour and its social semiotic orientation are perceived primarily in relation to a specific positioning of a colour as a resource to create meanings in society and cultural contexts, and concerning the relationship between categorisation and vantage, which is understood as a cognitive process accompanied by two mental coordinates: the reference point and perception. What needs to be mentioned is linguistic research comparing the names of colours in Slavic languages (e.g. Bjelajeva 2005, Komorowska 2010), involving a cognitive and semantic analysis of primary colour terms in Polish and English (e.g. Gieroń-Czepczor 2011) or analysing lexemes in Italian and Polish (e.g. Skuza 2015). In reference to contrastive studies on colour, it is also worth mentioning works on semantics (e.g. Wierzbicka 2006), translation (e.g. Diadori 2012) and ancient history (e.g. Mancini and Lorenzetti 2013).

The aim of this paper is to discuss the consequences of differences in coding colours for translation from one language into another, as well as for or foreign language teaching. These consequences and the resulting translation strategies will be presented using mostly Polish and German examples; however, other Indo-European languages will be included as well.

Since the paper presents preliminary reflections, no specific methodology is applied, but in the case of further attempts to analyse this topic, it seems reasonable to use the methodology
developed by Tokarski and Waszakowa. Tokarski (2004) examines colour terms from the point of view of their prototypes and connotations, referring mostly to artistic texts and cultural facts, and taking into account highly individualised textual connotations. The aim of Waszakowa’s research is to analyse the connotations of a given colour term in order to indicate individual semantic spheres to which it refers, as well as to compare the conceptualisation of a given portion of the spectrum in different languages (Waszakowa 2000b).

2. Recognising and naming colours

In order to achieve language accuracy (correctness) and the correctness of its use in specific speech acts, we must establish specified competences for using lexical material (see Florczak 2010: 62). The correctness competence is understood as an ability to distinguish correct solutions from the incorrect ones and the appropriate from the inappropriate. Florczak points out that the first kind of competence is less complicated on the level of communication since it operates on two values: true and false. Thus, it can be assumed that the process of coding colours would mean searching for approximate correlatives. We can refer to three values which are, in fact, approximate. For example, amaranth is digitally defined in Hex colour codes as #E52B50; in RGB [0-255] as 229, 43, 80; in CMYK [0–100%] as 0, 81, 65, 10; in HSV [°, %, %] as 348.1°, 81.2 %, 89.8 % (https://www.colorhexa.com/e52b50, accessed 15.11.2021). The system used for numerical specification is the hexadecimal colour model for colouring electronic documents, referred to as RGB. Graphic software or special colour pickers are used to generate such hexadecimal codes. It is therefore advisable to check the shade on the scale in the case of doubt whether a given colour is the same or very close. It needs to be remembered that the RGB model is theoretical and device-dependent, which means that on various devices, the RGB component may have slightly different spectral characteristics, which means
that every device may have its own range of colours that can be obtained.

The second competence is no longer defined so clearly with regard to translating precision, but by reference to the semantic effects and estimation of whether the speaker actually said what he/she wanted to say or whether he/she was understood the way he/she wanted to be understood. Translating names of colours seems to be surprisingly difficult when confronted with the necessity of applying both competences. A doubt arises, for example, in the case of the colour white which is differentiated by peoples of the North. It turns out that their imagination singled out at least eleven shades of white and it is difficult to find proper equivalents of them all in other languages. In the above context, the question arises whether the process of searching for equivalents is connected with the first or the second competence and whether this model of correctness can be achieved in the sense of binary options at all. While searching for an answer to the above questions it seems to be justified also to refer to the physical spectrum and therefore to an extra-linguistic referent. Badyda (2008: 27) stresses that the domain of non-linguistic phenomena to which the names of colours refer to is unchangeable and objectively measurable.

And yet, primary colours have been measured from different perspectives, which fails to lead to any interpretational unity. We can only observe discrepancies between theories (see e.g. Gage 1993: 35–36). It seems that Newton’s theory presented in Optics (1704), strongly contradicting the existence of the basic set of colours, proved to be a challenge for discussion whether the range of measurability could solve the problem of terminology at all. In its view As Gage (1993: 168–169) points out, in Newton’s theory, “all rays of refracted light are equally ‘basic’, ‘single’ or ‘simple’ and some of them such as green or purple and even yellow can appear in either a simple or complex form”. Newton’s considerations became the basis for the statement that physical values mingle with the paradigm of perception and subjective quality of colours.
Nevertheless, the pursuit of a definition of a primary colour was vigorous. Three basic colours – red, yellow and blue – were distinguished on the basis of the spatial model of Otto Runge’s sphere (Colour Sphere, 1810). Numerous other colours can result from mixing these three colours. It is important to consider the level of their transparency and many other physical features. Runge’s classification and Newton’s observations inspired Goethe to reflect on colours (Zur Farbenlehre, 1810).

It is worth mentioning that two processes of colour mixing can be distinguished: additive and subtractive. In the former, red, green and blue or red, yellow and blue are used. Adding beams of light of various lengths contributes to achieving light of white colour on the condition that we apply the proper degree of intensity of beams and contrast of the colours. For subtractive colour mixing cyan, magenta and yellow are used. This process is carried out through the subtraction of visible radiation.

3. Colour terms in the translation process and teaching translation

It is assumed that when a researcher works on colour vocabulary, it is necessary to refer to systemically established and conventionalised facts; however, in practice, unconventional contexts are often referred to, involving subjective perception.

It is very difficult to define a borderline between objective existence and subjective feeling, i.e. perception (Rzepińska 1989: 465–467). In this context, disagreement about the colours which are recognised as the primary ones is an ambiguous issue. Yet Berlin and Kay (1969: 6) claim that names of colours have some usage stability and propose a set of basic colour terms. A basic colour term must fulfil the following criteria:

(i) It is monoplexemic; that is, its meaning is not predictable from the meaning of its parts [...]

(ii) Its signification is not included in that of any other color term. [...]
(iii) Its application must not be restricted to a narrow class of objects. [...] 
(iv) It must be psychologically salient for informants. Indices of psychological salience include, among others, (1) a tendency to occur at the beginning of elicited lists of color terms, (2) stability of reference across informants and across occasions of use, and (3) occurrence in the idiolects of all informants. [...] (Berlin and Kay 1969: 6).

Kay and McDaniel (1978: 626) distinguish primary basic colour terms (words for white, black, red, green, yellow and blue) and secondary basic colour terms (words for brown, purple, orange, pink and grey). However, Bjelajeva (2005: 11) stresses that when it comes to their connotations, despite some stability, colour vocabulary undergoes constant development and changes with transformations in different spheres of life. Similar observations were made by Wittgenstein in Remarks on Colour, written in 1950:

Difficulties which we encounter pondering upon the essence of colours (difficulties which Goethe wanted to resolve in Die Farbenlehre) are rooted in the vagueness of our concept of ‘sameness of colours’ [...]. It is easy to notice that not all concepts of colour are homogeneous in logical respect. For example, the difference between the concept of ‘colour of gold’ or ‘colour of silver’ and the concept of ‘yellow’ or ‘grey’ (Wittgenstein 1998: 21–22).

Wittgenstein (1998: 20) also points out that a colour, depending on the perception of the environment or the angle of falling light, may seem either white or grey. Leaving aside diverse assessments coming from individual ways of perception and also a possible connection between perceiving and naming colour, it is also important to explain semantic components through which it is possible to describe features of colours in different languages (qtd in Wierzbicka 1999: 405). In different languages, colour names are often polysemous, different symbolism of colours is noted, as well as connotations, and differences in names
of basic and non-basic colour terms. The study by Bawej (2018: 87–88) can be recalled in this particular context. The author’s aim was to compare Polish and German names within the translation of phrases used in general and specialist language. The analysed names and phrases refer to the following colours: white, yellow, red, blue, green and black. Bawej (2018: 232) analysed the presence colour lexemes in proper nouns, phrases and idiomatic expressions.

Completely different colour terms are likely to appear in the target language as compared to the original language, e.g. German Grünschnabel is Polish żółtodziób (literally ‘yellow beak’) and English greenhorn, German die rote Laterne – Polish szary koniec (literally ‘grey end’ – the very end), keine blaue Ahnung haben – nie mieć zielonego pojęcia (literally ‘not to have a green idea’ – not to have a clue). Sometimes no colour terms appear, e.g. blauen Dunst reden – pleść androny – to talk nonsense.

It is stressed that the Polish adjective biały ‘white’ is used to mean light, shiny, glistening, pale (see Boryś 2005: 26). Polish biały, Russian bielyj and French blanc originate from the common Proto-Indo-European root bhel- ‘shiny, light’. But German weiß derives from the Proto-Indo-German root kweit ‘to shine, to glow’; English white has the same origin (cf. Zausznica 1959: 443). The words for white are found in plant names, e.g. white clover – Weiβklee, white mustard – weiβer Senf. This connection is also found in other languages: in Czech (bílý jetel), French (trèfle blanc), Spanish (trébol blanco) or Russian (белый клевер / belyj klever), yet in English, for example, there is a word with no colour relation: shamrock and so is in Belarusian: канюшына (kaniuśyna). Bawej (2018) gives numerous examples, including białe tango (white tango – the one when women ask men to dance with them), białogłowa (white head – a woman), biała niedziela (white Sunday – the first Sunday after Easter), biały murzyn (white Negro – a person who works very hard and is badly treated), biała sala (white hall – name for one’s own home when they do not go out on New Year’s Eve), biała śmierć (white death – cocaine or sugar) – in all these cases there
are no German equivalents containing colour terms. Yet it is also possible to find expressions that turn out to be the translator’s false friends, for example, *die weiße Woche* which in German means sale of underwear and *biały tydzień* in Polish a week of octave after the First Communion. It seems reasonable to try to assess whether these similarities and differences also influenced by the direction of profiling, which comes close to delineating the scale of appropriateness. This term is understood by Komorowska (2010: 39) as recognition of perceptual or conceptual field (knowledge of certain reality from a particular point of view). Accordingly, whiteness could have universal connotations. Wierzbicka defines the problem in a similar way, claiming that the notion of primary colours has its source in universals of human experience (1999: 445–446). The author’s explications are based on the estimation of prototypical references according to the schema: black – night, white – day, red – fire, yellow – sun, green – vegetation, blue – sky, brown – ground (see also e.g. Komorowska 2010, Stanulewicz 2006, Teodorowicz-Hellman 1998, Tokarski 2004, Waszakowa 2000a). Taking this point of view into account, one must assume that assessment does not match the suitability scale and it moves towards the scale of correctness. The privileged position of the colour red in numerous cultures may serve as an example. Connotations with blood could refer to life and vital forces. On the other hand, for Tokarski (2004: 22–23) as cited by Bawej (2018: 76):

prototypical paradigms do not always find confirmation in other languages and sometimes they require different conceptual paradigms for the names of colours, e.g., in contemporary Polish for the colour of yellow apart from the sun the other, secondary and territorially limited reference should be invoked, namely the one of autumn dying nature.

In Japan, for example, blood is not associated with strength and force but rather with death and passing which makes one think of the German *Heute rot, morgen tot* (*today red, tomorrow dead*). Such bipolarity becomes the cause of many problems in
translation processes. As an example of incorrect connotation, a translation failure of several second-year students specialising in translation (German Philology, University of Gdańsk) can be quoted: they translated *den roten Faden verlieren* (*to lose the thread*) as *to lose the red ribbon* (*the symbol of leftism*).

Words of blue can serve as other examples since the word *blau* originates from the Indo-German *bhel* (*shining, glistening*), similarly to the words for white (*e.g.* Polish *biały*). Yet metaphors of *blau* (*blue*) mean something remote, unknown (*Duden 2001: 100*) and in Old High German it was transformed into *blao* which meant navy blue, dark. In Russian, blue is *синий* (*sinij*) or *голубой* (*goluboj*). It is worth mentioning that the Serbian language does not use two names for yellow and blue, as well as blue and green (*Ivić 2014: 11*). There are examples of translation in which it is impossible to remain entirely faithful to the original. Thus, Polish *czarna jagoda* (*black berry*) means *blueberry* in English and *Blaubeere* in German, *blauer Fleck* is *siniak* in Polish (*a bruise*) – not a blue stain. *Blauhusten* is translated as *koklusz* (*Whooping cough*) – without any colour term and *Forelleblau* is simply *pstrag z wody* (*trout sauté*).

It is interesting to go beyond the frames of basic colour terms and consider regionalisms. Bawej stresses that the translation of the Polish lexeme *modry* (*intensive blue*) is quite rare (*the English equivalent of the expressions* *modra kapusta* and *Blaukraut* is *red cabbage*). Following Teodorowicz-Hellman (2000: 84), Bawej states that although the expression *modre oczy* (*intensive blue eyes*) is used in contemporary Polish, in other phrasemes the adjective *modry* is used in sub-dialects and has limited collocability.

Let us present several other examples. The word for yellow which is found in Polish *żółty lak* (*yellow sealing wax*) is translated as gold: *Goldlack*, *gąska żółta* (*literally yellow goose – chavalier mushroom*) is translated into German as *Grünling* (*greenish*). It can be justified by the fact that in colloquial language, this mushroom is called *zielonka* (*the green one*). It is different in the case of *żółtaczek* (*orange chromide*) which is a yellow fish.
This word is translated as *Buntbarsch* (colourful perch) and thus a reasonable, yet not always answerable, question about the degree and limits of colour spectrum of a recipient can be posed (see Komorowska 2010b: 41). It is possible to interpret these examples as resulting from the common green-yellow area, concentration on two focal points (green and yellow) and of the dominance of green and yellow in different contexts. Another possibility may be undermining green as a primary colour, as Wittgenstein (1998: 70) does:

> What justifies the fact that green is a primary colour and not the one which was created by mixing blue and yellow? [...] How can I tell that saying “primary colour” I mean the same thing as someone else?

In a similar way, the author talks about colour terms which, in the source language, are treated as basic but in the target language as non-basic. For example, Polish *rudy* is *red* in English, *rot* in German, *червоний* (*červonyj*) in Ukrainian and so on. In all the languages, it is associated with the colour red, not its shades. The problem also appears when one attempts to name colours names that do not have a standardised name yet and translate these names. This situation may be encountered when one tries to translate names of dyes, varnishes, cosmetics (such as lipsticks), nail varnishes, eye shadows and others. It is worth mentioning that Stanulewicz (2010) analyses the names of such colours. A similar attempt was taken by third-year students of German Philology at the University of Gdańsk specialising in translation. They compiled a dictionary of non-typical names of colours in four languages (Polish, English, French and German). This dictionary classifies vocabulary considering associations from the target languages. It is worth giving an example of the colour term *bulany* (equine coat colour) which is *yellow dun* in English, *weisslichgelb* in German and *aubere* in French. But there are some terms in the dictionary whose equivalents have not been found yet. Examples include *rdzawo-pomidorowy*
(rusty-tomato), tabakowy (tobacco), tęczowosiwy (rainbow-grey), weglowo-czarny (coal-black), wielbłądzia sierść (camel coat), heliotropowy (heliotrope) etc.

Measurability of pigments and their specific physical and chemical properties again become an argument for using the criteria of correctness and appropriateness. Yet the existence of effective equivalents in all four languages prevents us from accepting this thesis. The reasons should be looked for in the psychology of marketing since different surveys show that 65 % of customers – while choosing a product – consider both colour and attractive name as the most important factors motivating the purchase. Certain colours influence consumers’ behaviours and that is why the authors of the dictionary refer to the target recipient’s imagination and associations of a given lexeme.

4. Conclusions and defining possible research fields

A few conclusions may be drawn based on the above considerations. Language as an audio-verbal system presents only descriptions of visual impressions. The connection between symbols and their referents are arbitrary and the result of differences is determined by:

(a) personal perception;
(b) collective perception;
(c) language itself (e.g. the discrepancy between names of colours – of basic and non-basic sets);
(d) cultural differences between the sender and the recipient;
(e) kinds of communication (different names will be used in advertising and in technical texts).

It would be interesting, for example, to develop schemas illustrating nets of meanings and lexical semantics connected with naming colours which could be treated as a separate domain of comparative studies (see e.g. Stanulewicz and Danilewicz 2016: 174). Foreign language students and translators could make
use of this research. Currently, the discussion is usually limited to the comparison of two languages (as in Bawej 2018, Komorowska 2010a, Komorowska and Stanulewicz 2018) or the research process concerns the work of one writer or poet or a defined literary epoch (e.g. Badyda 2008).

Apart from basic colour terms, which, in general, are not problematic in translation, texts include non-basic terms, referred to as names of variant shades. The above reflections are supposed to make translation students think about the following areas:

- What are the semantic motivations in fixed expressions that contain the colour lexemes in the source language and target language?
- To what extent are similar choices, values, judgements and cultural experiences preserved in of different languages? To what extent do they differ?
- It is the process of perceiving shades and translating their names very individualised? Does it elude categorisation in the sense of specification of the notion of colour and translation within the competence of correctness?

Translation (and translation teaching) offers a unique possibility of presenting colour terms against a wide cultural background, also in a comparison with the standard language, at the same time showing individualised semantic modifications, which is very interesting from the point of view of diachronic linguistics.

It is advisable to refer to the phenomenon of polysemy of colour terms names in the context of learning/teaching vocabulary. While some authoritative dictionaries aim at precision, foreign language course books do not always do so. Particular attention should be paid to compounds and fixed expressions, which are difficult to translate into the target language. Moreover, various ways of understanding “colourful” reality could manifest themselves in conveying the same meaning by using different colour names and in creating untypical colour names which do not exist in present-day Polish, German or other
languages. Even though dictionaries specify such differences in particular contexts, foreign language textbooks do not tend to do that. It is necessary to further analyse this subject because this short paper presents only selected examples of such problems. An example of further actions may be a study on a detailed conceptualisation of individual shades, taking into account the respondents’ nationality, age, gender, the context of using language and education, as well as characteristics of understanding prototypical references of colour terms.

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