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THE BASIC COLOUR TERMS OF CZECH

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Abstract. This article reports a study on Czech basic colour terms, the aim of which was to establish their exact number. A basic colour term is understood as Brent Berlin and Paul Kay defined it in 1969. The data for the study was collected using the field method of Ian Davies and Greville Corbett (1994). Fifty-two native speakers of Czech, aged 15 to 70, performed two tasks: a colour-term list task and a colour naming task. The list task was complemented by the cognitive salience index designed by Sutrop (2001, 2002). An analysis of the results shows that there are exactly 11 basic colour terms in Czech – *bílá* 'white', *červená* 'red', *žlutá* 'yellow', *modrá* 'blue', *zelená* 'green', *černá* 'black', *oranžová* 'orange', *fialová* 'purple', *hnědá* 'brown', *růžová* 'pink', and *šedá* 'grey'. Czech language does not possess an additional basic colour term *rudá* for red and there is no colour term meaning blue and yellow as been suggested in some studies.

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1. Introduction

After Berlin and Kay published their famous and much discussed study "Basic colour terms: Their Universality and Evolution" the colour terms of Czech language have been served as a topic of interest mainly from three different points: 1) whether there are two (*červená* and *rudá*) or only one (*červená*) basic colour term for red; 2) whether there is a (basic) colour word meaning both 'blue' and 'yellow'; 3) how many basic colour terms are found in Czech language.

Czech colour names *červená* 'red' and *rudá* 'red' have attracted particular interest in Czech colour studies, because it has been considered an original phenomenon. It has been stated that they might both be basic colour terms (Scmiedtová and Scmiedtová 2006, Nagel 2000). The study of Scmiedtová and Scmiedtová is based on Czech National Corpus. In fact, two colour names for red, *piros* 'red' and *vörös* 'red' are also found in the Hungarian language. Berlin and Kay suggested in

their monograph that both of them are basic colour terms (1969:95). This statement has lived a long life and only lately it has been found out that *piros* 'red' is indeed a basic term, while *vörös* 'red' is not (Bogatkin-Uusküla and Sutrop 2005a, 2005b, MacLaury et al. 1997, Uusküla and Sutrop 2007). Lebedeva has studied colour terms *červená* 'red' and *rudá* 'red' comparing them with Russian colour name *krasnyj* 'red' (1980–1981). This study does not aim to identify the basic colour terms of Czech, but to bring forth the meaning differences of *červená* 'red' and *rudá* 'red'. In addition, some good examples of collocations with *červená* 'red' and *rudá* 'red' are also presented (Lebedeva 1980–1981:442).

A short discussion about one other Czech colour name, *plavý* 'bright, blond' emerged in 1972. McNeill proposed that the Czech language categorise blue and yellow together in one colour name (McNeill 1972:30). He also argued that other contemporary Slavonic languages share this feature, a fact that we should consider very carefully. According to this paper, Van Brakel has installed this example amongst the anomalies that differ from the Berlin and Kay theory under the title "one word including a pair of opponent 'primaries' in its extension" (Van Brakel 1994:773). Although the word *plavý* 'bright, blond' also exists in contemporary Czech, its use is restricted to a narrow class of objects and it does not seem to be a common name either for blue or for yellow.

Many scholars have tried to identify the basic colour terms in Czech using different methods or expert opinions (see for example Nagel 2000, Pawłowski 1999, Scmiedtová and Scmiedtová 2002, 2006). David Short has proposed an expert opinion that Czech possesses 11 basic colour terms. He also suggests that the second colour term for red, *rudá* is used only in political context (1993:526). To date, Czech colour terms have not been investigated with empirical field methods. The original method of Berlin and Kay is complicated and time-consuming when used on a large number of subjects (Berlin and Kay 1969:5–7). Ian Davies and Greville Corbett have proposed a new field method based on Berlin and Kay's original procedure (Davies and Corbett 1994, 1995), which is used in this study. The field method makes the interviews easier to conduct and limits them to approximately 20–40 minutes each, depending on language. Many European languages, like Russian (Davies and Corbett 1994), English (Davies and Corbett 1995), Estonian (Sutrop 2000a, 2000b, 2001, 2002), Hungarian (Bogatkin-Uusküla and Sutrop 2005a, Uusküla and Sutrop 2007), Turkish (Özgen and Davies 1998), and Catalan (Davies et al. 1995) as well as many exotic languages (e.g. Davies et al. 1992, Davies et al. 1994) have been studied with this field method.

The present study was carried out to establish the basic colour terms in Czech with particular interest in whether there are 11 basic colour terms or exceptionally 12 basic colour terms, with an addition of the other colour term for red, *rudá*. No experimental study has yet been carried out to examine which of the two terms *šedá* 'grey' and *šedivá* 'grey' is the basic term for grey, or whether the colour terms *fialová* 'purple', *oranžová* 'orange' and *růžová* 'pink' are the basic colour terms in Czech.

2. The basic colour term theory

Basic colour terms are a relatively well studied area of vocabulary and the studies on them cover many languages of the world. Research on colour terms became particularly intense after the publication of Berlin and Kay's (1969) inspiring and much debated monograph.

Berlin and Kay argued that every language possesses universally 11 basic colour categories (see Figure 1). According to the theory, language has between 2 and 11 basic colour terms. They present a hierarchy which specifies a limited number of evolutionary paths that a language can take when adding new colour categories. Languages start with two basic colour terms: black and white; the third term to be acquired is red; the fourth term is either green or yellow; the fifth term is whichever of green or yellow is missing; the sixth term is blue and so on. If a language has a particular basic colour term, it should also already entail all the earlier basic colour terms in the hierarchy.

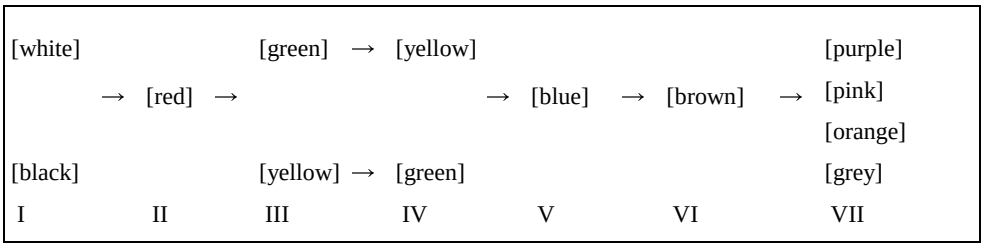

Figure 1. Temporal-evolutionary ordering of basic colour terms after Berlin and Kay (1969). The Roman numbers indicate the corresponding evolutionary stage.

The hierarchy of basic colour terms has been modified since Berlin and Kay's original study, concerning precisely the earlier stages of development (see Kay 1975, Kay and McDaniel 1978, Kay et al. 1991, Kay et al. 1997 etc.).

Basic colour term was defined by Berlin and Kay as follows (1969:6–7):

> *"(i) It is monolexemic; 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.*
> *These criteria (i–iv) suffice in nearly all cases to determine the basic color terms in a given language. The few doubtful cases that arise are handled by the following subsidiary criteria:*
> *(v) The doubtful form should have the same distributional potential as the previously established basic terms.*

> *(vi) Color terms that are also the name of an object characteristically having that color are suspect. This subsidiary criterion would exclude* orange *in English, if it were a doubtful case on the basic criteria (i–iv).*
> *(vii) Recent foreign loan words may be suspect.*
> *(viii) In cases where lexemic status is difficult to access [see criterion (1)], morphological complexity is given some weight as a secondary criterion."*

A basic colour term in the present study is understood exactly according to this definition. I comment on the definition with some Czech examples. First of all, the first criterion of the definition has often been misunderstood, because of the word *monolexemic* in it. In fact, this does not mean that a basic colour term must necessarily be a morphologically simple word. But its meaning has to be unique. According to that criterion the Czech colour word *červená* 'red' could be a basic colour term, while *světle červená* 'light red' could not, because there are two meanings included in this compound expression: first, it means that the colour under question is red, second, it means that the red colour under question is lighter than a normal red. However, if the compound *světle červená* would have been lexicalised so that its meaning would be 'pink' instead of 'light red', somewhat different conclusions could be made. We could consider it as a possible candidate for a basic colour term, in spite of its grammatical complexity.

The second criterion would eliminate such an expression in Czech as *citrónová* 'lemon', because it is a kind of yellow for most native speakers of Czech. The third criterion eliminates all colour names that are used to indicate hair colour (e.g. *bruneta* 'brunette') or a colour of some animal. This criterion would also eliminate colour term *plavá* 'blond, bright', even if it would accomplish other criteria. (The colour term *plavá* 'blond, bright' will be examined in the discussion part.) The fourth criterion applies to a psychological salience of a colour word, which means that it should be named by all subjects in the beginning of the elicited lists and should also have a stability of reference across informants. Urmas Sutrop has created a cognitive salience index that suits all criteria. He states (2001:274):

> *"The cognitive salience index takes into account two cognitively important parameters: the term frequency and its mean position. The mean position of a term corresponds to its tendency to occur at the beginning of elicited lists of terms, while the frequency of that term corresponds to the occurrence of the term in the idiolects of all subjects."*

The reason why the cognitive salience index has also been used in the present study is that it easily distinguishes between basic and non-basic colour terms. The subsidiary criteria of Berlin and Kay should only be considered when a basic colour term is still in doubt after meeting all the primary criteria. That is why the English *orange* should be excluded from a basic colour term set if it did not fulfil the primary criteria. Such Czech colour terms as *oříšková* 'nut' and *meruňková* 'apricot' could be removed from the basic colour term set, because they do not satisfy any of the primary criteria, although they mean both fruits and colours.

Berlin and Kay studied 98 languages in total and they also collected primary experimental data for 20 languages. Two Slavonic languages, Russian and Bulgarian were also empirically examined. However, as was often the case in Berlin and Kay's studies based on field work, the number of subjects was insufficient and thus the gathered data was not too reliable. Russian basic colour terms are probably the most studied among Slavonic languages. Since the monograph of Berlin and Kay, several publications on this topic can be found (for example Corbett and Morgan 1988, Davies and Corbett 1994, 1998, Frumkina 1984, Morgan and Corbett 1989, Morgan 1993, Moss 1989a, 1989b, 1994, Moss et al. 1990, Paramei 2005). The monograph of Berlin and Kay lists basic colour terms of Russian as follows: *belyj* 'white', *černyj* 'black', *krasnyj* 'red', *zelenyj* 'green', *želtyj* 'yellow', *sinij* 'dark blue', *goluboj* 'light blue', *koričnevyj* 'brown', *purpurnyj* 'purple', *rozovyj* 'pink', *oranževyj* 'orange' and *seryj* 'grey' (1969: 99). Davies and Corbett studied the Russian basic colour terms with their field method and shown that they are somewhat different, e.g. that the basic colour term for orange is *oranževyj* (not *kirpichnyj*, which in English would be 'brick red') and the basic term for purple is *fioletovyj* (not *purpurnyj*, which should rather be translated to English as 'purplish red') (1994:67). Davies and Corbett have also confirmed that Russian, indeed, has two basic colour terms for blue, *sinij* 'dark blue' and *goluboj* 'light blue'. However, Paramei's (2005) opinion of two basic colour terms for blue in Russian differs and she suggests that *goluboj* emerged in Russian as a culturally basic term. The research on Bulgarian basic colour terms has not been so encompassing, but some studies concerning the topic can be found (for example Todorova 1981). However, as Russian or Bulgarian colour terms are not the main topic of the present study, they will not be extensively discussed.

3. Case study: Czech colour terms

Language: Czech, West-Slavonic, Slavonic, Indo-European.

Regions where the data have been collected: Brno and Prague in Czech Republic.

Dates: 13–17 March 2007 (Brno) and 18–23 March 2007 (Prague).

Subjects: There were 52 subjects in total[1], 33 female and 19 male, whose age ranged from 15 to 70, with a mean of 34.7 years. The age of men ranged from 15 to 70 years with a mean of 38.2 years, and the age of women ranged from 17 to 70 years with a mean of 32.6 years.

The subjects were from the following locations (in alphabetical order; if there was more than one subject, the number of subjects is given in brackets): Boskovice, Brno (16), České Budějovice (2), Frýdek-Místek, Havlíčkův Brod, Jablonec nad Nisou, Jičín, Litoměřice, Litomyšl, Moravský Krumlov, Most (2),

[1] In fact there were 53 subjects in total. One subject did not have a normal colour vision, which was tested by *The City University Color vision test* (Fletcher 1980). Throughout this study only the responses of subjects with normal colour-seeing ability are considered.

Prague (11), Přibyslav, Prostějov, Řitka, Trutnov, Svitavy, Zdiby, Znojmo (4), and Žulová.

All subjects were native speakers of Czech; some of the subjects were unable to name their dialect, but were aware that they spoke 'somewhat dialectally'. Four subjects had elementary education, 16 secondary education, 5 vocational education, and 27 higher education, including MA and PhD students.

All subjects completed the list task first and then the colour naming task. The subjects were not informed before the test that the questions would refer to colours and colour terms.

Colour vision: All the subjects had normal colour-seeing ability. All subjects were tested by using *The City University Color Vision Test* (Fletcher 1980), where the test was conducted after the list task and before the colour naming task. In the colour vision test, the subject is shown ten black tiles, in the middle of which is a dot of a certain tone of colour surrounded by four dots of colour of differently coloured dots. The interviewee has to say which dot is the most similar to the central one: above, down, right or left. The test makes it possible to diagnose almost all the anomalies of colour vision like deuteronopia, protonopia, tritanopia, etc.

The language of the interview: The author of this article spoke Czech with her subjects.

4. Methods

The field method. The field method proposed by Davies and Corbett (1994, 1995) is used: an interview comprises two parts, the list task and the colour naming task.

The list task. The subjects were asked to name as many colours as they knew. All terms were written down in the order in which the subjects listed them. The experimenter wrote down exactly what the subjects said. The subjects were then thanked and moved on to the *Colour Vision Test* described above, and following this, the colour naming task.

The list task has been completed by the cognitive salience index by Sutrop (2001), where two parameters – naming frequency and mean position have been unified. According to Sutrop, his index is preferable to other list task (free-list) indices (such as Smith 2003, Smith and Borgatti 1997), because it is free from the effects that depend on the length of individual lists (Sutrop 2001:272). In addition, Sutrop's cognitive salience index also works with a small samples or small numbers of subjects.

The formula is calculated as follows: $S = F / (N \times mP)$. The dividend considers the frequency (F) with which a term is named in the list task. The divisor N x mP considers the weight of the mean position (mP) in which the term is named, and N is the number of subjects. If all subjects have named a term (F = N) and the mean position of that term is 1, then the salience (S) is also 1 for that term. The cognitive

salience index is normed to vary between 1 and 0. The basic terms in every domain are the most salient. The salience index of the most ideally salient term has the figure 1. Terms that tend to be named last and with a low frequency have a value declining towards 0. The term that is not mentioned at all has the salience 0. The cognitive salience index gives comparable results between different investigations, as it does not depend on the length of the individual lists (Sutrop 2001:267).

Frequency, mean position, and the integral cognitive salience index are all good criteria for discriminating basic terms from non-basic ones. Sometimes the discrimination must also be made between more and less basic terms. According to Sutrop, in such cases certain linguistic criteria can well be applied.

Sutrop states that his index is not only good for distinguishing basic colour terms from non-basic ones. Far more, with the cognitive salience index all list task interviews are analysable. Under the term 'list task', Sutrop means written or oral interviews in anthropology, linguistics, psychology, or other social sciences. The format of the list task is, "Please list all X-s that you know" (Sutrop 2001: 263). According to this format, the researcher or interviewer can ask his subjects to name as many animals as they know, or as many fruits as they know, or all the colours they know, etc. The question could also be: "Please name everything that you can sense with your nose".

In the current article, Sutrop's index has been used because it combines the tendency of a basic term to occur at the beginning of the elicited lists (mean position) with its occurrence in the idiolects of all subjects (term frequency). These two parameters correspond to the criteria of psychological salience in the definition of the basic colour term by Berlin and Kay (1969: 6) (presented in section 2). In addition, the cognitive salience index helps to separate possible basic colour terms from non-basic ones.

The colour naming task. Sixty-five colour-squares (tiles) were shown to all subjects, one square at a time, in random sequence. The order was different for each subject and the colours were shown in sufficient daylight on a grey base. The experimenter asked, indicating each colour tile, the unvaried question: "*Jak se jmenuje tahla barva?*" 'What is the name of this colour?' in Czech. All the answers were written down as said.

Stimuli. In the colour naming task, 65 standard tiles were used as stimuli. Each tile was a 5 × 5 cm sized wooden square covered with coloured paper. These colours were chosen from the *Color Aid Corporation* range of colour papers using the Ostwald colour system (Ostwald 1939). The rationale for the 65 colour sample selection can be found in Davies et al. (1992).

The Ostwald colour system. In the Ostwald colour system, the main features of colour are colour tone i.e. *hue*, content of white i.e. *tint* and content of black or blackness i.e. *shade*. The brightness of the grey scale is also divided into eight grades according to their white and black content. Color Aid uses the modification of the Ostwald colour system, where there are 24 chromatic colours – 6 basic colours: Y – yellow, O – orange, R – red, V – violet, B – blue, G – green and their transition tones e.g. YO – yellow-orange, YOY – yellow-orange-yellow. Every

colour tone breaks down into four light variants T1-T4, where share of white increases pro rata, and into three dark variants S1-S3, where share of black increases. In addition, some extra-system colours have been used, such as Sienna and Rose Red. Co-ordinates CIE[2] of colour tiles used in the experiment (lightness, content of red and content of green) are available in the study by Davies and Corbett (1994,70–71).

5. Czech colour terms: results

In this section the results of Czech colour terms are presented. First, the list task and the colour naming task will be analysed separately, and then the results of both tasks will be combined.

All Czech colour terms in this study are presented in feminine form, by association with *barva* 'colour' (feminine form) (as also given by Short 1993: 526). This corresponds exactly to the responses given by most of the subjects: although three subjects also named some colour terms in masculine and neuter forms, their answers are reduced to feminine form to simplify the analyses.

The subjects named 4421 Czech colour terms in all, among which 613 were different. All the compound names of different types of connection, provided by the subjects were referred to by different names (such as *tmavě fialová* 'dark purple' and *tmavá fialová* 'dark purple'; *citrónově žlutá* 'lemon yellow' and *citrónová žlutá* 'lemon yellow', etc.)

5. 1. The list task

In the list task, the subjects named 1074 colour terms in all, among them 224 different ones. The average list of named colours contained 20.65 entries (there were 21.69 entries in the average list of women and 18.84 entries in the average colour list of men). The lowest number of colour names which came to a subjects' mind was 9, offered by a 63-year-old man, a musician by profession. The most colour terms, 54, were offered by 33-year-old woman, assistant professor in history who tend to paint in her free time. Women usually offered more colour names than men, and people with a higher level of education named more colour names than those with a lower level of education.

Table 1 presents all the colour terms that the subjects named first in the list. The colour term most frequently mentioned first by both men and women was *bílá* 'white' (altogether 23 times). It was followed by *červená* 'red' (14 times), *modrá* 'blue' (6 times), *černá* 'black' (5 times) and *zelená* 'green' (2 times).

[2] Known as the CIE 1931 color space or the CIE XYZ color space created by the International Commission of Illumination (CIE).

Table 1. The first offered colour terms in the list task

Term	English gloss	Women (33)	Men (19)	Total (52)
bílá	white	15	8	23
červená	red	8	6	14
modrá	blue	3	3	6
černá	black	4	1	5
zelená	green	1	1	2
holubi šeď	dove grey	1	0	1
žlutá	yellow	1	0	1

Table 2 shows the naming frequency, mean position, salience index, and their corresponding rank orders for colour terms offered by five or more subjects in the list task. The list task characterises every named colour term by two parameters – the frequency of the word, i.e. how many subjects named each colour term, and the mean position, i.e. in which position in the sequence the colour term was named on average.

The most frequently named colour terms are *černá* 'black' and *zelená* 'green', both named by 50 subjects. Those terms are followed by the colour name *bílá* 'white' (named 49 times). Only 12 terms were named by at least half of the subjects (Fr ≥ 26): *černá* 'black', *zelená* 'green', *bílá* 'white', *modrá* 'blue', *fialová* 'purple', *žlutá* 'yellow', *červená* 'red', *hnědá* 'brown', *oranžová* 'orange', *růžová* 'pink', *šedá* 'grey', and *béžová* 'beige'.

It is difficult to decide which colour names contest for the basic colour term status according to the mean position measure. In fact, there is no significant break found in the sequence at all. I therefore consider those colour terms as candidates for basic terms that have the first eleven values. The candidates for basic colour term status are (according to their rank) *červená* 'red', *bílá* 'white', *žlutá* 'yellow', *modrá* 'blue', *zelená* 'green', *černá* 'black', *oranžová* 'orange', *fialová* 'purple', *hnědá* 'brown', *šedivá* 'grey' (rank 10, named by only 4 subjects), *okrová* 'ochre' (rank 11, named by 19 subjects). The candidates for basic colour term status according to the naming frequency, *růžová* 'pink' and *šedá* 'grey' remain in the ranks 13 and 14 respectively. We can see that the 10th rank is occupied by another colour term for grey, *šedivá*. We also find other colour terms, *okrová* 'ochre', *vínově červená* 'wine red' (rank 12, named by 4 subjects) and *bleděmodrá* 'light blue' in the middle of the naming list by the mean position rank. It obviously shows that if these non-basic colour terms are named at all, they are listed right after the subjects have named all the basic colour terms.

As we can see the two parameters – naming frequency and mean position – provide different colour words as candidates for basic colour term status. That is why Urmas Sutrop (2001, 2002) has offered a cognitive salience index to join these parameters. The cognitive salience index is described in detail in Sutrop (2001).

Table 2. Frequency, mean position, salience index, and the corresponding rank orders for colour terms mentioned by five or more subjects in the list task ranged by the rank of the cognitive salience index.

Term	Gloss	Frequency	Rank	Mean position	Rank	Salience	Rank
bílá	white	49	3	3.98	2	0.237	1
červená	red	45	7	3.80	1	0.228	2
žlutá	yellow	46	6	4.41	3	0.200	3
modrá	blue	48	4	5.69	4	0.162	4
zelená	green	50	1	5.98	5	0.161	5
černá	black	50	1	6.72	6	0.143	6
oranžová	orange	44	9	7.68	7	0.110	7
fialová	purple	48	4	9.13	8	0.101	8
hnědá	brown	45	7	9.58	9	0.090	9
růžová	pink	42	10	10.31	13	0.078	10
šedá	grey	36	11	10.81	14	0.064	11
béžová	beige	35	12	11.51	16	0.058	12
okrová	ochre	19	14	10.00	11	0.037	13
tyrkysová	turquoise	24	13	13.96	21	0.033	14
lila	mauve	15	17	13.47	19	0.021	15
khaki	khaki	12	18	12.50	18	0.018	16
zlatá	gold	17	15	19.47	40	0.017	17
stříbrná	silver	16	16	19.19	39	0.016	18
tmavě modrá	dark blue	10	20	12.00	17	0.016	19
světle modrá	light grey	11	19	13.64	20	0.016	20
purpurová	crimson	10	20	14.60	22	0.013	21
vínová	wine red	9	22	15.44	24	0.011	22
bleděmodrá	pale blue	6	29	11.00	15	0.010	23
rudá	red	9	22	16.89	28	0.010	24
azurová	azure	8	24	18.13	34	0.008	25
bordó	bordeaux	8	24	18.50	35.5	0.008	26
tmavě zelená	dark green	7	27	17.00	29.5	0.008	27
šedivá	grey	4	46	9.75	10	0.008	28
cihlová	brick red	7	27	17.14	31	0.008	29
bronzová	bronze	8	24	20.38	45	0.008	30
vínově červená	wine red	4	46	10.25	12	0.008	31
karmínová	carmine	6	29	15.67	25	0.007	32
písková	sand	6	29	17.00	29.5	0.007	33
lososová	salmon	6	29	18.83	38	0.006	34
hrášková	grass green	5	39	16.20	27	0.006	35
krémová	cream	6	29	19.83	42	0.006	36
rezavá	rusty	6	29	20.00	43.5	0.006	37
světle zelená	light green	6	29	20.00	43.5	0.006	38
starorůžová	old pink	6	29	20.50	46.5	0.006	39
tmavomodrá	dark blue	5	39	17.60	32	0.005	40
blankytně modrá	sky blue	6	29	21.17	48	0.005	41
petrolejová	petrol	6	29	22.00	49	0.005	42
hráškově zelená	pea green	4	46	15.00	23	0.005	43
tmavě žlutá	dark yellow	5	39	18.80	37	0.005	44
citrónově žlutá	lemon yellow	4	46	15.75	26	0.005	45
pařížská modř	blue of Paris	4	46	18.00	33	0.004	46
světle hnědá	light brown	5	39	22.60	50	0.004	47
smetanová	sour cream	4	46	18.50	35.5	0.004	48
tmavě hnědá	dark brown	5	39	23.60	51	0.004	49
antracitová	anthracite	5	39	24.00	52	0.004	50

The most salient terms according to the cognitive salience index are 11 standard terms *bílá* ‘white’, *červená* ‘red’, *žlutá* ‘yellow’, *modrá* ‘blue’, *zelená* ‘green’, *černá* ‘black’, *oranžová* ‘orange’, *fialová* ‘purple’, *hnědá* ‘brown’, *růžová* ‘pink’, *šedá* ‘grey’, and one non-standard term *béžová* ‘beige’. Cognitive salience is repeated in Figure 2.

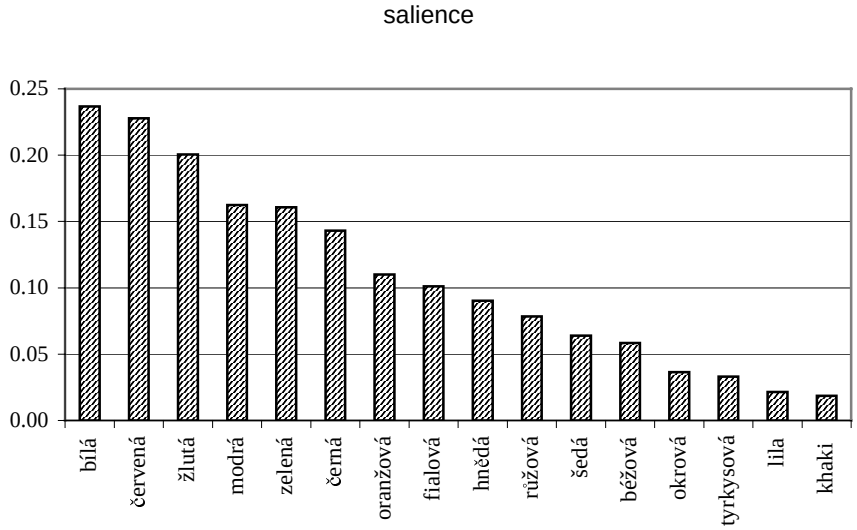

Figure 2. Most salient colour terms in Czech according to the cognitive salience index.

5. 2. The colour naming task

In the colour naming task, subjects named 65 colour squares in 3347 ways, among these were 517 different terms. The subjects were allowed to use all colour terms that came to their mind, including modified and compound terms. Some subjects said they did not know the name for some given tile on 33 occasions where: six subjects did not know how to name the colour tile with the Color Aid code ROR S3 (mostly *světle růžová* ‘light pink’), five subjects did not name the colour tile YOY S2 (mostly *béžová* ‘beige’), etc. As a mean, 15.52 different names were given for each tile on average.

Table 3 shows the distribution of most frequent terms given to each tile with the number of subjects who used each term in the Ostwald colour space, provided that a term was used by at least two subjects.

Twelve most frequently named terms in the list task account to 46% of the total responses in the colour naming task: they are used 1529 times out of a total of 3347 responses. These terms are also the most frequently used terms for 48 out of 65 tiles (together with *béžová* ‘beige’). The only other most frequently used terms are the following (given together with the number of tiles to which this applies in

Table 3. Distribution of the most frequent terms and their corresponding frequencies in the tile naming task. Fr – frequency

Code	Hue	Fr		Tint	Fr		Shadow	Fr
Y	žlutá *'yellow'*	43				S2	hnědá *'brown'*	11
	sytě žlutá *'saturated yellow'*	2					khaki *'khaki'*	10
YOY	žlutá *'yellow'*	34	T4	krémová *'cream colour'*	11	S2	béžová *'beige'*	8
	tmavě žlutá *'dark yellow'*	7		béžová *'beige'*	9		okrová *'ochre'*	4
YO	oranžová *'orange'*	26	T3	béžová *'beige'*	16	S3	hnědá *'brown'*	35
	tmavě žlutá *'dark yellow'*	6		světle žlutá *'light yellow'*	4		tmavě hnědá *'dark brown'*	3
OYO	oranžová *'orange'*	44						
	jasně oranžová *'clear orange'*	2						
	sytě oranžová *'saturated orange'*	2						
O	oranžová *'orange'*	35				S1	hnědá *'brown'*	19
	světle červená *'light red'*	3					světle hnědá *'light brown'*	10
						S3	hnědá *'brown'*	28
							tmavě hnědá *'dark brown'*	14
ORO	oranžová *'orange'*	15	T3	oranžová *'orange'*	9	S3	béžová *'beige'*	6
	červená *'red'*	11		světle oranžová *'light orange'*	7		starorůžová *'old pink'*	6
							světle růžová *'light pink'*	
RO	červená *'red'*	42	T3	růžová *'pink'*	13	S3	hnědá *'brown'*	31
	světle červená *'light red'*	2		lososová *'salmon'*	6		tmavě hnědá *'dark brown'*	12
ROR	červená *'red'*	31	T3	růžová *'pink'*	31	S3	světle růžová *'light pink'*	10
	tmavě červená *'dark red'*	5		světle růžová *'light pink'*	5		starorůžová *'old pink'*	6
				lososová *'salmon'*	5		růžová *'pink'*	6
R	červená *'red'*	10	T4	růžová *'pink'*	30	S3	hnědá *'brown'*	21
	tmavě růžová *'dark pink'*	6		světle růžová *'light pink'*	10		tmavě hnědá *'dark brown'*	19
RVR	růžová *'pink'*	13				S1	fialová *'purple'*	20
	tmavě růžová *'dark pink'*	9						

Code	Hue	Fr		Tint	Fr		Shadow	Fr
						S3	světle fialová *'light purple'*	14
							lila 'mauve'	8
RV	fialová *'purple'*	31	T2	růžová *'pink'*	22			
	růžovofialová *'pinkish purple'*	16		fialová *'purple'*	9			
VRV	fialová *'purple'*	34				S3	světle fialová *'light purple'*	19
	tmavě fialová *'dark purple'*	6					fialová *'purple'*	9
V	fialová *'purple'*	33						
	tmavě fialová *'dark purple'*	13						
VBV	fialová *'purple'*	31	T4	fialová *'purple'*	14			
	tmavě fialová *'dark purple'*	10		světle fialová *'light purple'*	13			
BV	tmavě modrá *'dark blue'*	15				S2	tmavě modrá *'dark blue'*	13
	modrá *'blue'*	12					modrofialová *'bluish purple'*	9
BVB	modrá *'blue'*	39				S3	šedá *'grey'*	21
	tmavě modrá *'dark blue'*	4					šedomodrá *'greyish blue'*	11
B	modrá *'blue'*	38	T1	modrá *'blue'*	33			
	střední modrá *'middle blue'*	3		světle modrá *'light blue'*	9			
BGB	modrá *'blue'*	35	T3	světle modrá *'light blue'*	18			
	světle modrá *'light blue'*	7		modrá *'blue'*	9			
BG	tyrkysová *'turquoise'*	11	T1	tyrkysová *'turquoise'*	21	S2	modrozelená *'bluish green'*	10
	modrá *'blue'*	8		modrozelená *'bluish green'*	6		tmavě zelená *'dark green'*	8
	modrozelená *'bluish green'*	8					zelená *'green'*	8
GBG	zelená *'green'*	17				S2	světle modrá *'light blue'*	8
	zelenomodrá *'greenish blue'*	8					modrozelená *'bluish green'*	6
G	zelená *'green'*	32				S3	tmavě zelená *'dark green'*	28

Code	Hue	Fr		Tint	Fr		Shadow	Fr
	tmavě zelená *'dark green'*	7					zelená *'green'*	10
GYG	zelená *'green'*	35	T4	světle zelená *'light green'*	22	S1	zelená *'green'*	29
	světle zelená *'light green'*	3		zelená *'green'*	7		světle zelená *'light green'*	6
YG	zelená *'green'*	15				S3	tmavě zelená *'dark green'*	19
	světle zelená *'light green'*	11					zelená *'green'*	10
YGY	světle zelená *'light green'*	13				S3	světle zelená *'light green'*	27
	zelená *'green'*	11					hrášková *'grass green'*	3
							šedozelená *'greyish green'*	3
							zelenkavá 'greeny'	3
ROSE RED								
	tmavě růžová *'dark pink'*	8						
	růžová *'pink'*	7						
SIENNA BROWN								
	hnědá *' brown'*	12						
	světle hnědá *'light brown'*	11						

Achromatic hues

WHITE		GRAY 6	
	bílá *'white'* 44		šedá *'grey'* 36
GRAY 1			šedivá *'grey'* 4
	bílá *'white'* 16	GRAY 8	
	šedá *'grey'* 10		černá *'black'* 36
GRAY 2		BLACK	
	šedá *'grey'* 23		černá *'black'* 49
	světle šedá *'light grey'* 16		
GRAY 4			
	šedá *'grey'* 38		
	šedivá *'grey'* 5		

parenthesis): krémová 'cream' (1), modrozelená 'blue green' (1), světle fialová 'light purple' (2), světle modrá 'light blue' (2), světle růžová 'light pink' (1), světle zelená (3), tmavě modrá (2) 'dark blue', tmavě růžová 'dark pink', tmavě zelená 'dark green' (2), and tyrkysová 'turquoise' (2). Although these terms are the most frequent terms for 17 tiles, only tmavě zelená 'dark green' is used for one tile by more than half of the respondents. These patterns become clearer in Tables 4 and 5.

Table 4 shows the most frequent terms used in the tile naming task, their total frequency, the number of tiles for which they were dominant, the number of tiles for which they were named at least once, and the frequency/tile ratio. The number of tiles for which a term was used at least once shows specificity and the extension of the colour terms in the colour space. The final column frequency/tile ratio shows the consensus among subjects: the higher the score the greater the consensus.

According to the frequency measure (Fr > 85), there are 10 candidates for basic term status: *fialová* 'purple', *modrá* 'blue', *zelená* 'green', *hnědá* 'brown', *růžová* 'pink', *oranžová* 'orange', *šedá* 'grey', *červená* 'red', *žlutá* 'yellow', and *černá*

Table 4. The most frequent terms in the tile naming task, their total frequency, their dominance frequency, the number of tiles for which they were named at least once, and the frequency/tile ratio

Term	Gloss	Total frequency	Dominance frequency	No. of tiles	Frequency/Noof tiles
fialová	purple	205	129	15	13.67
modrá	blue	191	145	13	14.69
zelená	green	186	96	13	14.31
hnědá	brown	161	95	9	17.89
růžová	pink	139	61	14	9.93
oranžová	orange	136	105	10	13.60
šedá	grey	129	74	6	21.50
červená	red	100	73	7	14.29
žlutá	yellow	90	77	7	12.86
černá	black	86	85	3	28.67
světle zelená	light green	76	-	8	9.50
tmavě zelená	dark green	72	28	8	9.00
bílá	white	63	44	4	15.75
světle fialová	light purple	60	–	8	7.50
světle modrá	light blue	50	–	8	6.25
tmavě hnědá	dark brown	49	–	5	9.80
tyrkysová	turquoise	45	–	7	6.43
béžová	beige	43	–	8	5.38
tmavě fialová	dark purple	43	–	8	5.38
světle šedá	light grey	40	–	7	5.71
modrozelená	bluish green	37	–	6	6.17
světle růžová	light pink	37	–	7	5.29
tmavě modrá	dark blue	35	–	4	8.75
zelenomodrá	greenish blue	31	–	8	3.88
tmavě růžová	dark pink	30	–	8	3.75
světle hnědá	light brown	26	–	6	4.33
lila	mauve	25	–	7	3.57
khaki	khaki	23	–	5	4.60
fialková	violet	22	–	9	2.44
starorůžová	old pink	20	–	6	3.33
modrofialová	bluish purple	19	–	4	4.75
šedivá	grey	17	–	6	2.83

'black'. One candidate for basic status, *bílá* 'white' fails to achieve high levels of frequency. This may be explained by the fact that there was only one colour tile where the term applied (WHITE). Besides also one light grey colour tile (GRAY 1) was named *bílá* 'white' in 16 occasions. The rationale for 65 colour sample selection can be found in Davies et al. (1992).

The final column, indicating the frequency/tile ratio, shows the consensus of use. Although *černá* 'black' is only ranked 14 on the frequency measure, it scores highest on the consensus measure, reflecting high agreement for the two tiles (BLACK and GRAY 8) that it was used to name. In contrast, *fialová* 'purple' that was named most frequently and for many tiles in the colour naming task, scores lower on the consensus measure, reflecting little agreement about its referents. According to the frequency/tile ratio measure (< 12), there are 10 candidates for basic status: *černá* 'black', *šedá* 'grey', *hnědá* 'brown', *bílá* 'white', *modrá* 'blue', *zelená* 'green', *červená* 'red', *fialová* 'purple', *oranžová* 'orange', and *žlutá* 'yellow'. As we can see, the consensus among subjects is higher with achromatic colours than with chromatic colours.

In addition to the naming frequency and the frequency/tile ratio the dominance frequency is also given. A term is considered dominant if at least half of the subjects use the same name for a given tile which means that the dominance index is DI ≥1/2. That is the reason why some of the terms do not have a dominance frequency at all. The dominance index is counted to calculate the specificity index (SI) – another measure that is independent of overall frequency of use. The specificity index is the dominant frequency/total frequency ratio at the same level. If the specificity index was 1, all subjects used the same term only as the dominant term and there was absolute consensus among the subjects (see Davies and Corbett 1994: 79). The specificity index together with dominant colour terms in different consensus levels for Czech colour terms is shown in Table 5 below.

It is possible to consider dominance and specificity indices on different levels of consensus. In the present article the following limits for dominant indices are used (numbers are rounded where necessary):

DI	1/10	1/4	1/3	1/2	2/3	3/4	1
Frequency pro tile ≥	5	13	17	26	35	39	52

Table 5 shows the dominant colour terms on different consensus levels together with specificity indices. There is no dominant colour term for any tile at the absolute consensus level in Czech. The highest is the consensus for colour term *černá* 'black' (SI = 0.99). Comparing the results with the studies of other languages in the geographic area following the same method, it should be pointed out that for Hungarian the specificity index is also the highest for the colour term *fekete* 'black' (Uusküla and Sutrop 2007), while, for example, the related language Russian has *belyj* 'white' in its place (for this term in Russian SI = 1, which indicates the absolute consensus among subjects) (Davies, Corbett 1994:79). In Czech, the colour term *bílá* 'white' is only the 6th term according to the specificity

index, because it was also named as *krídově bílá* ‘chalk white’, *lomená bílá* ‘broken white’, *slonová kost* ‘ivory’, literally ‘elephant’s bone’, *smetanově bílá* ‘sour cream coloured white’, once even *šedá* ‘grey’ and once *světle šedá* ‘light grey’. At the same time one light grey colour tile (GRAY 1) was named *bílá* ‘white’ in 16 cases.

Table 5 shows that 12 colour terms have specificity index, i.e. they are dominant on 1/2 consensus level. In addition to 11 standard terms also the colour name *tmavě zelená* ‘dark green’ appears in the sequence (28 subjects used the colour tile G S3 with this term). Regardless of that, we could remove this colour name from our list of basic terms, because the definition of Berlin and Kay sets the rule that morphologically complex terms the meaning of which is not unique, cannot be basic. As *tmavě zelená* consists of two parts, meaning ‘dark (tone of colour)’ and ‘green’, it could be removed from the set of basic colour terms.

Looking at the very low consensus level (threshold DI 1/10) we see that all 65 colour tiles have a dominant colour term. On the 25% consensus level (DI 1/4) there are 52 tiles with 18 dominant names. On the 50% consensus level (DI 1/2) there are 29 tiles with 12 dominant colour names, which are the most probable candidates for a basic term status: *černá* ‘black’, *žlutá* ‘yellow’, *oranžová* ‘orange’, *modrá* ‘blue’, *červená* ‘red’, *bílá* ‘white’, *fialová* ‘purple’, *hnědá* ‘brown’, *šedá* ‘grey’, *zelená* ‘green’, *růžová* ‘pink’, and *tmavě zelená* ‘dark green’. On the 67% consensus level (DI 2/3) we find 12 tiles with 8 dominant terms. The

Table 5. Dominant colour terms in the tile naming task.
SI – specificity index, DI – dominance index.

Term	Gloss	SI	DI 1/10	DI 1/4	DI 1/3	DI 1/2	DI 2/3	DI 3/4
černá	black	0.99	2	2	2	2	2	1
žlutá	yellow	0.86	3	2	2	2	1	1
oranžová	orange	0.77	5	4	3	3	2	1
modrá	blue	0.76	8	4	4	4	3	1
červená	red	0.73	4	2	2	2	1	1
bílá	white	0.70	2	2	1	1	1	1
fialová	purple	0.63	11	6	5	3	0	0
hnědá	brown	0.59	7	5	5	3	1	0
šedá	grey	0.57	7	4	4	1	0	0
zelená	green	0.52	10	5	4	3	1	0
růžová	pink	0.44	9	5	3	2	0	0
tmavě zelená	dark green	0.39	4	2	2	1	0	0
tmavě hnědá	dark brown	–	3	1	0	0	0	0
světle zelená	light green	–	5	3	2	0	0	0
tmavě modrá	dark blue	–	2	2	0	0	0	0
světle fialová	light purple	–	4	3	1	0	0	0
tyrkysová	turquoise	–	2	1	1	0	0	0
světle modrá	light blue	–	4	1	1	0	0	0
modrozelená	greenish blue	–	5	0	0	0	0	0
světle šedá	light grey	–	4	1	0	0	0	0
béžová	beige	–	4	1	0	0	0	0
tmavě fialová	dark purple	–	4	1	0	0	0	0

consensus on such a high level shows strong agreement among the subjects. On the 75% consensus level (DI 3/4) we find 6 tiles with 6 colour names: *černá* 'black', *žlutá* 'yellow', *oranžová* 'orange', *modrá* 'blue', *červená* 'red', and *bílá* 'white'.

With the specificity index at the 50% consensus level there would be 10 candidates for basic status; the threshold SI 1/2 > 0.40.

5. 3. Combined results

In the list task and the colour naming task the subjects knew 613 different colour terms. From the 224 terms listed in the first task, 90 were not used in the colour naming task (including *stříbrná* 'silver', *zlatá* 'gold' and *bronzová* 'bronze'). However, in the colour naming task the subjects used 391 new different colour names not listed in the first task. Morphologically, the two tasks produced 2713 monolexemic terms (143 different) and 1709 compound terms of which 471 were different. The most frequently named complex terms after 11 basic colour terms and some simple non-basic terms tend to be formulated with the modifiers *světle*/*světlá/světlo-* 'light' and *tmavě*/*tmavá/tmavo-* 'dark'.

As a preliminary result, 13 candidates fulfilled at least one criterion according to different tasks and measures. These account for 48% of the total responses (2117) in the list and colour naming tasks. There are 11 standard terms: *bílá* 'white', *černá* 'black', *červená* 'red', *žlutá* 'yellow', *zelená* 'green', *modrá* 'blue', *hnědá* 'brown', *oranžová* 'orange', *fialová* 'purple', *šedá* 'grey' and *růžová* 'pink', plus 1 complex term *tmavě zelená* 'dark green' and 1 simple term *béžová* 'beige'. Other colour terms expected to have a (nearly) basic term status, like *rudá* 'red' and *šedivá* 'grey' did not meet any of the established criteria (see Table 6).

All previous results for establishing the basic colour terms in Czech are combined and the established terms, arranged according to their level of basicness, are presented in Table 7. In the list task, the naming frequency (Fr ≥ 30) and mean position (mp < 8), and in colour naming task the naming frequency (Fr ≥ 85), dominance index (DI 1/2 ≥ 1) and specificity index (SI > 0.40) are considered, measured against given numerical values as thresholds which have to be surpassed. The salience index is not included here. The last column of Table 6 shows the sum of these criteria, where the value for one colour term could be from 0 to 5. The higher this number is, the more certain is the status of the colour term as basic. In other words, it shows the terms' level of basicness.

All the candidates except *rudá* 'red' and *šedivá* 'grey' have cleared at least one threshold for basicness, although different terms have managed a different number of hurdles. The term is considered to be basic if it has managed more than one hurdle; i. e. at least two hurdles. It follows that there are exactly 11 basic colour terms in Czech: *bílá* 'white', *černá* 'black', *červená* 'red', *žlutá* 'yellow', *zelená* 'green', *modrá* 'blue', *hnědá* 'brown', *oranžová* 'orange', *fialová* 'purple', *šedá* 'grey', and *růžová* 'pink'. The other colour term for red *rudá* 'red' is by no means a basic colour term in Czech, whereas it could probably be defined as culturally basic in terms of Paramei (2005). The same holds true for colour term *šedivá*

Table 6. Summary of the results where colour terms are ranged according to the level of basicness. Fr – naming frequency, mp – mean position, DI – dominant index, SI – specificity index.

Term	Gloss	List task		Colour naming task			Sum of criteria
		Fr > 30	Mp < 8	Fr ≥ 85	DI 1/2≥1	SI > 0.4	
černá	black	+	+	+	+	+	5
červená	red	+	+	+	+	+	5
modrá	blue	+	+	+	+	+	5
žlutá	yellow	+	+	+	+	+	5
bílá	white	+	+	–	+	+	4
zelená	green	+	+	+	+	+	4
hnedá	brown	+	–	+	+	+	4
oranžová	orange	+	–	+	+	+	4
fialová	purple	+	–	+	+	+	4
ružová	pink	+	–	+	+	+	4
šedá	grey	+	–	+	+	+	4
tmavě zelená	dark green	–	–	–	+	–	1
béžová	beige	+	–	–	–	–	1
rudá	red	–	–	–	–	–	0
šedivá	grey	–	–	–	–	–	0

Table 7. Basic colour terms in Czech (in feminine form) ranged by Berlin and Kay's original basic colour term order

Czech basic colour terms	English gloss
bílá	white
černá	black
červená	red
zelená	green
žlutá	yellow
modrá	blue
hnědá	brown
oranžová	orange
šedá	grey
růžová	pink
fialová	purple

which has been added to the basic colour term list by some scholars (for example Nagel 2000). The colour term *tmavě zelená* 'dark green' has been removed from the basic term list because of the original criterion by Berlin and Kay, according to which the colour names where the meaning is predictable from the meaning of its parts are not considered basic, i.e. colour names that are not monolexemic should be removed from the list of basic terms. The modificator *tmavě* 'dark' shows that the colour in question is somewhat darker than the normal green.

According to the original definition of Berlin and Kay, a colour term is basic if there is a stability of reference across informants (1969: 6). If only the list task is

considered, the term *béžová* ‘beige’ has some basic qualities, but there is no consensus among the subjects in the colour naming task as to what kind of colour *béžová* ‘beige’ actually is. This term was not dominantly used for any tile. Table 3 shows that it has been mostly given to a colour tile YO T3. It follows that the term *béžová* ‘beige’ must be eliminated, because it does not agree with the original definition of basicness.

The findings from the list and the colour naming task suggest that Czech has exactly eleven basic colour terms. The Czech language corresponds to the last, the fully developed seventh stage of Berlin and Kay’s scheme, which means that all eleven basic colour categories have been lexicalised.

6. Discussion

Although the colour vocabulary studies became particularly intensive after Berlin and Kay published their monograph, colour terms in Slavonic languages had attracted attention as an interesting topic much earlier. The first monograph about Slavonic colour names was written by Loewenthal and published already in 1901. It mostly deals with etymologies and colour word modification. The monograph of Herne (1954) is similar to the first, because it also gives colour word etymologies in most Slavonic languages. Both monographs should be highly esteemed because they give an overview about colour terms in Slavonic languages.

Lately, some other monographs have been published. Czech language has been tackled for example in Brüggemann 1996. There is also an unpublished MA thesis about Czech colour terms, where the semantics of basic colour terms and colour word collocations are examined (Nagel 2000). Comparing these two monographs, it is obvious that Nagel has his own opinions, even presenting the Czech basic colour terms that he has not investigated with the field methods, while Brüggeman (1996) only refers to the opinions of the other scholars and has therefore nothing new to add.

The importance of a number of articles on Czech colour terms studied with different methods must be duly acknowledged. Some of the studies are difficult to access to non-Czech speakers, as they are written is Czech. For example, the study by Josef Štěpán (1983), which describes a research on colour metaphors and colour verbs; the one by Ivan Honl (1985), where toponyms where the colour name *červená* ‘red’ emerges are analysed. Other examples could be *Červená nad Vltavou* or *Úpy Červená hora* (Honl 1985:40). Lebedeva has studied colour terms *červená* ‘red’ and *rudá* ‘red’ comparing them with Russian colour name *krasnyj* ‘red’ (1980–1981). The aim of this study has not been to identify the basic colour terms of Czech, but to emphasise the meaning differences of *červená* ‘red’ and *rudá* ‘red’. In addition, some examples of collocations with *červená* ‘red’ and *rudá* ‘red’ are also presented (Lebedeva 1981:442). Irená Vaňková has written several articles about colour word metaphors in Czech (e.g. 1999). Fortunately one

recently published important article is also available in English (Vaňková 2007). It is a study about linguistic and cultural connotations related to colour in different contexts. Emotions expressed with colour words are examined and numerous expressions are presented as examples. The article describes Czech as a language with many colour metaphors. Studies by Jaroslav Peprník (1985, 1987) in English focus on colour terms in Czech fiction and compare them with colour names in English fiction. In Peprník 1987 the overview of colour term motivators is given. None of the afore-mentioned studies follow the tradition of Berlin and Kay, and they do not aim to identify the basic colour terms of Czech. Although some of them refer to the basic colour term theory (Štěpán 1983, Peprník 1987), the main issue lies somewhere else.

The articles aiming either to identify the basic colour terms in Czech or to argue against Berlin and Kay's universalist views should be acclaimed as well. Adam Pawłowski (1999) has analysed colour term frequencies on the basis of frequency dictionaries in Czech and nine other Indo-European languages (English, French, Italian, Polish, Russian, Rumanian, Slovak, Spanish and Ukrainian) with statistical methods and compares the results with the evolutionary scheme proposed by Berlin and Kay. The colour terms analysed in the study are not only the basic colour terms in every language, but many clearly non-basic terms are also included, such as *tmavomodrý* 'dark blue' under category *modrý* 'blue' or *bronzový* 'bronz' under category *hnědý* 'brown' in Czech, etc. (1999:234).

McNeill (1972) deals with basic colour terms in many languages (Czech amongst others) claiming that in contrast to Berlin and Kay there is no universal sequence in which colour terms emerge, because this order is determined by the function of colour terms in a culture (1972:22). He argues that Czech has one term to indicate both yellow and blue, *plavý* 'bright, blond'. He takes this example from the etymological dictionary of Czech and Slovak (Machek 1957:372). Its use in contemporary Czech is marginal and it is not a common name either for blue or for yellow. Actually, its use is restricted to a very narrow class of objects, such as the fur colour of a dog (e.g. *plavý pes* 'bright coloured dog, beige dog') and its meaning is a bright kind of brown, ochre or orange and it could be understood as bright (related to Latin *pallidus*). In the present study not one of the participated subjects named the term *plavý*. The interviews with the subjects clearly show the patterns in the language usage, and the colour term *plavý* is probably missing in the active contemporary Czech. It might only be used in some written texts. The term also forms a part of some specific terminology (e.g. it is used in cosmetics as a tone for eye shadows or hair colour in an expressions such as *tmavě plavý* 'dark blond', *medově plavý* 'honey blond' or *platinově plavý* 'platinum blond'). Also the mushroom, Boletus impolitus, is called *hřib plavý*. The term *plavý* 'bright, blond' cannot substitute basic terms for blue and yellow, because both colours have been lexicalised in Czech and are named by their own names, *modrý* and *žlutý*, respectively. The colour name *plavý* could probably also be translated to English as 'beige', but there is another colour term, *béžová* 'beige', which aspires for the basic colour term status. Its naming frequency was relatively high in the list task

and according to the cognitive salience index it could be considered as a basic term. However, in the colour naming task there was no consensus among subjects about which colour tile should be named *béžová* 'beige'. The colour tile YO T3 was mostly named by that term (altogether 16 times). There were several other colour tiles named with that name, e.g. YOY T4 (9 occasions), YOY S2 (8 occasions), ORO S3 (6 occasions), O S1, ORO T3, ROR S3, and R T4 (all on 1 occasion). The wide distribution of colour tiles (including pink ones) clearly shows that the subjects do not know, which colour *béžová* 'beige' actually is. Therefore the colour term *béžová* 'beige' should not be considered as one of the basic colour terms.

Věra Schmiedtová and Barbara Schmiedtová have argued (2002, 2006) that there are exceptionally 12 basic colour terms in Czech, including one extra term for red, *rudá*, which they have glossed to English as 'deep red'. According to my empirical tests *rudá* was used altogether on 12 occasions by 10 subjects: 9 interviewees named it in the first, list task, and only one subject indicated three colour tiles that were rather purplish red with this name (these tiles were not deep red in colour). There are differences between the present study and the one conducted by Schmiedtová and Schmiedtová, because the original method of Berlin and Kay requires oral interviews with subjects and cannot be adapted to corpus studies. Nonetheless, the case of one extra colour term in a language is an interesting feature and probably needs further research. It is found in several collocations and connotations and might be an areal phenomenon, because a similar case of two reds, *piros* and *vörös*, is also found in Hungarian (see Bogatkin-Uusküla and Sutrop 2005b). According to Galina Paramei *sinij* '(dark) blue' and *goluboj* '(cold) light blue' in Russian form a case where the former should be considered as a basic term, while the latter has culturally basic traits (Paramei 2005). She argues (2005:30):

> *"The lexical-semantic analysis above shows that, in linguistically specific contexts,* sinij *cannot be substituted for* goluboj *and the two blue terms are not interchangeable."*

It is possible that both Czech and Hungarian as neighbouring languages follow that pattern with having two terms for red, so that they only possess one basic colour term for red, but use the other term for red as a culturally basic one, i.e. not in a basic term level. However, the two terms are not interchangeable in some contexts, which are quite often connected to emotions or are politically charged, e.g. the Czech *rudá* as well as the Hungarian *vörös* are connected with a state of being angry at someone (in Czech *být rudý vztekem* 'to be red with anger', *zroudnot jako krocan* 'to become red as turkey', meaning 'to become red with anger', in Hungarian *elvörösödik* 'to become red (with anger)', etc.). The phrases connected with socialism and even more with communism are found in both Czech and Hungarian. For instance, the Red Army is *Rudá armada* in Czech and *Vörös hadsereg* in Hungarian, a Red soldier is *vöröskatona* in Hungarian; red star, the emblem of some communist countries, is *rudá hvězda* in Czech and *vörös csillag* in Hungarian, etc.

Nagel (2000) has suggested that besides extra red there might also be an extra term for grey, *šedivá*, although he himself argues partly against this claim. The use of the term *šedivá* is restricted to a narrow class on objects (e.g. hair) and could be removed from the set of basic colour terms according to the original Berlin and Kay criterion (see section 2). Furthermore, according to the subjects' answers in the list and in the colour naming task, *šedivá* was used only on 21 occasions by 10 people.

The field method of Davies and Corbett has shown that there are exactly 11 basic colour terms in Czech and they are the following: *bílá* 'white', *černá* 'black', *červená* 'red', *žlutá* 'yellow', *zelená* 'green', *modrá* 'blue', *hnědá* 'brown', *oranžová* 'orange', *fialová* 'purple', *šedá* 'grey', and *růžová* 'pink'. The main questions were whether there were two or only one basic colour term for red (*červená* 'red' and *rudá* 'red') and grey (*šedá* 'grey' and *šedivá* 'grey') as indicated in some earlier studies. The collected data supports the claim that there is only one basic term for both red (*červená*) and grey (*šedá*). The question of the colour name *plavá* (considered as an anomaly in the Czech language by McNeill 1972) is not included in the research question of the present article as it does not belong to the set of basic colour terms and was not named by any subject at all.

7. Summary and conclusion

In the list and the colour naming tasks 52 subjects named 4421 colour terms of which 613 were different. In the list task there were 1074 terms offered in total, of which 213 were different. In the colour naming task the subjects gave 3347 colour names to 65 colour squares. Among these there were 517 different names.

There are exactly 11 basic colour terms in Czech language. Ranged by cognitive salience index they are the following: *bílá* 'white', *červená* 'red', *žlutá* 'yellow', *modrá* 'blue', *zelená* 'green', *černá* 'black', *oranžová* 'orange', *fialová* 'purple', *hnědá* 'brown', *růžová* 'pink' and *šedá* 'grey'. Czech corresponds to the fully developed, VII evolutionary stage by the theory of Berlin and Kay, having lexicalised categories also for purple, pink, orange and grey. Furthermore, Czech does not possess an extra basic colour term for red, *rudá* 'red' as has been suggested in some earlier studies.

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References

Berlin, Brent and Paul Kay (1969) *Basic color terms: their universality and evolution*. Berkeley: University of California Press.

Bogatkin-Uusküla, Mari and Urmas Sutrop (2005a) "Tänapäeva ungari keele põhivärvinimed". [The basic colour terms of contemporary Hungarian.] *Keel ja Kirjandus* (Tallinn) 7, 558–570.

Bogatkin-Uusküla, Mari and Urmas Sutrop (2005b) "Kas ungari keeles on kaks punase värvi põhinime *piros* ja *vörös*?" [Are there two basic colour terms for red, *piros* and *vörös* in Hungarian?] *Emakeele Seltsi Aastaraamat* (Tallinn) 50, 93–110.

Brüggemann, Franz Rudolf (1996) *Die Farbbezeichnungen in der tschechischen und slovakischen Schriftsprache der Gegenwart*. (Europäische Hochschulschriften, 16/54.) Frankfurt am Main: Peter Lang.

Corbett, Greville and Gerry Morgan (1988) "Colour terms in Russian: reflections of typological constraints in a single language". *Journal of Linguistics* 24, 31–64.

Davies, Ian, Catriona MacDremid, Greville Corbett, Harry McGurk, David Jerrett, Tiny Jerrett, and Paul Sowden (1992) "Color terms in Setswana: a linguistic and perceptual approach". *Linguistics* 30, 1065–1103.

Davies, Ian, Christine Davies, and Greville Corbett (1994) "The basic colour terms of Ndebele". *African Languages and Cultures* 7, 1, 36–48.

Davies, Ian and Greville Corbett (1994) "The basic color terms of Russian". *Linguistics* 32, 65–89.

Davies, Ian and Greville Corbett (1995) "A practical field method for identifying basic colour terms". *Languages of the World* 9, 1, 25–36.

Davies, Ian and Greville Corbett (1998) "A cross-cultural study of colour grouping: tests of the perceptual-physiology account of color universals". *Ethos* 26, 3, 338–360.

Davies, Ian, Greville Corbett, and José Bayo Margalef (1995) "Colour terms in Catalan: an investigation of eighty informants, concentrating on the purple and blue regions". *Transactions of the Philological Society*, 93, 1, 17–49.

Fletcher, Robert (1980) *The City University colour vision test*. 2nd ed. London: Keeler.

Frumkina, Revekka Markovna (1984) *Cvet, smysl, sxodstvo*. Moskva: Nauka.

Herne, Gunnar (1954) *Die slavischen Farbbenennungen*. *Eine semasiologish-etymologishe Untersuchung*. Uppsala: Almqvist and Wiksell.

Honl, Ivan (1985) "Červená barva v naších místních a pomístních jménech". [Red colour in our place names]. *Červenokostelecko. Červený Kostelec*, 3, 38–43.

Kay, Paul (1975) "Synchronic variability and diachronic change in basic color terms". *Language and Society* 4, 257–270.

Kay, Paul and Chad, K. McDaniel (1978) "The linguistic significance of the meanings of basic color terms". *Language* 54, 610–646.

Kay, Paul, Brent Berlin, and William Merrifield, (1991) "Biocultural implications of systems of color naming". *Journal of Linguistic Anthropology* 1, 12–25.

Kay, Paul, Brent Berlin, Luisa Maffi, and William Merrifield (1997) "Color naming across languages". In *Color categories in thought and language*, 21–56. C. L. Hardin and Luisa Maffi, eds. Cambridge: Cambridge University Press.

Lebedeva, Ljudmila Alekseeva (1980–1981) “Russkoe prilagatel’noe “krasnyj” i ego sootvetstvija v češskom jazyke”. *Ruský jazyk: časopis pro vyučování ruštině na československých* 31, 10, 440–445.

Loewenthal, Wilhelm (1901) *Die slavische Farbenbezeichnungen*. Leipzig: August Pries.

Machek, Václav (1957) *Etymologický slovník jazyka českého a slovenského*. [An etymological dictionary of Czech and Slovak.] Praha: Nakladatelství Československé Akademie Věd.

MacLaury, Robert E., Judit Almási, and Zoltán Kövecses (1997) “Hungarian *piros* and *vörös*: color from points of view”. *Semiotica*. 114, 1/2, 67–81.

Moss, Anthony E. (1989a). “Basic colour terms: problems and hypotheses”. *Lingua* 78, 313–320.

Moss, Anthony E. (1989b). “Does Russian have a basic term for purple?”. *Linguistics*, 27, 145–155.

Moss, Anthony, Ian Davies, Greville Corbett, and G. Laws. (1990) “Mapping Russian colour terms using behavioural measures”. *Lingua* 82, 313–332.

Morgan, Gerry (1993) “Basic colour terms: comparative results for French and Russian”. *French Language Studies*, 3, 1–17.

Morgan, Gerry and Greville Corbett (1989) “Russian colour term salience”. *Russian Linguistics* 13, 125–141.

Nagel, Sebastian (2000) *Zur Semantik der Grundfarbadjektive im Russischen und Tschechischen*. München. Unpublished MA thesis. http://www.cis.uni-muenchen.de/~wastl/pub/magister.html

Ostwald, Wilhelm (1939) *Die kleine Farbmeßtafel nach Wilhelm Ostwald*. Bearbeitet von Gerhard Streller und Grete Ostwald. Text von Gerhard Steller. Göttingen: Muster-Schmidt.

Pawłowski, Adam (1999) “The quantitative approach in cultural anthropology: application of linguistic corpora in the analysis of basic colour terms”. *Journal of Quantitative Linguistics*, 6, 3, 222–234.

Paramei, Galina V. (2005) “Singing the Russian blues: an argument for culturally basic color terms”. *Cross-Cultural Research* 39, 1, 10–34.

Peprník, Jaroslav (1985) “The colour black in Czech and English”. *Philologica Pragensia* 28, 3, 164-170.

Peprník, Jaroslav (1987) “Motivation in English and Czech colour terms”. *Glottodidactica Olomucensia Praha*, 111–137.

Schmiedtová, Věra and Barbara Schmiedtová (2002) “The color spectrum in language: the case of Czech. Cognitive concepts, new idioms, and lexical meanings”. In. *Proceedings of the 10th international symposium on lexicography, University of Copenhagen May 4–6, 2000*, 285–292. H. Gottlieb, J.E. Mogensen, A. Zettersten, eds. Series Lexicographica Niemeyer 109, Tübingen: Max Niemeyer.

Schmiedtová, Věra and Barbara Schmiedtová (2006) “Určení jazykové základovosti barev v Českém národním korpusu”. [Determination of colour focus status in the Czech National Corpus.] In *Korpusová lingvistika: stav a modelové přístupy*. [Corpus linguistics: its state and model approaches], 285–313. František Čermák and Renata Blatná, eds. Praha: Nakladatelství Lidové noviny.

Short, David (1993) Czech. In *The Slavonic languages*, 455–532. Bernard Comrie and Greville Corbett, eds. London, New York: Routledge.

Smith, J. Jerome (1993) “Using ANTHROPAC 3.5 and a spreadsheet to compute a free-list salience index”. *Cultural Anthropology Methods* 9, 3, 1–3.

Smith, J. Jerome, Louanna Furebee, Kelly Maynard, Sarah Quick, and Larry Ross (1995) “Salience counts: a domain analysis of English colour terms”. *Journal of Linguistic Anthropology* 5, 203–216.

Sutrop, Urmas (2000a) “The basic colour terms of Estonian”. *Trames* 4, 1: 143–168.

Sutrop, Urmas (2000b) “Basic terms and basic vocabulary”. In *Estonian: Typological Studies IV*, 118–145. Mati Erelt, ed. (Publications of the department of the Estonian Language, 14.) Tartu: University of Tartu.

Sutrop, Urmas (2001) “List task and a cognitive salience index”. *Field Methods* 13, 3, 263–276.

Sutrop, Urmas (2002) *The vocabulary of sense perception in Estonian: structure and history*. (Opuscula Fenno-Ugrica Gottingensia, 8.) Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, and Wien: Peter Lang.

Štěpán, Josef (1983) "O pojmenování barev a jeho využití současné češtině". [About colour names and their usage in present-day Czech] *Slovo a slovesnost* 44, 1, 22–29.

Todorova, Elena (1991) "Cvetăt na bălgarskata i finskata ezikova sistema". [Colours in Bulgarian and Finnish language systems]. In *Bălgaristichni izsledvaniia: treti bălgaro-skandinavski simpozium* (20–26 septembri 1985 g), 203–219. Milena Tsaneva, Petur Pashov, and Boian Vulchev, eds. Sofia: Univ. izdatelstvo Sv. 'Kliment Okhridski'.

Uusküla, Mari and Urmas Sutrop (2007) "Preliminary study of basic colour terms in modern Hungarian". *Linguistica Uralica* 43, 2, 102–123.

Vaňková, Irena (1999) "Barvy a emoce". [Colours and emotions]. *Čestina doma a ve světě* 1, 6–7.

Vaňková, Irena (2007) "*To have color* and *to have no color*. The coloring of the face in the Czech linguistic picture of the world". In *Anthropology of color: interdisciplinary multilevel modeling*, 441–456. Robert E. MacLaury, Galina V. Paramei, Don Dedrick, eds. John Benjamins Publishing Company.

Özgen, Emre and Ian Davies (1998) "Turkish color terms: tests of Berlin and Kay's theory of color universals and linguistic relativity". *Linguistics* 35–36, 919–956.