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The Basic Colour Terms of Finnish[1]

Abstract

This article describes a study of Finnish colour terms the aim of which was to establish an inventory of basic colour terms, and to compare the results to the list of basic terms suggested by Mauno Koski (1983). Basic colour term in this study 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). Sixty-eight native speakers of Finnish, aged 10 to 75, performed two tasks: a colour-term list task (name as many colours as you know) and a colour naming task (where the subjects were asked to name 65 representative colour tiles). The list task was complemented by the cognitive salience index designed by Sutrop (2001). An analysis of the results shows that there are 10 basic colour terms in Finnish—*punainen* 'red,' *sininen* 'blue,' *vihreä* 'green,' *keltainen* 'yellow,' *musta* 'black,' *valkoinen* 'white,' *oranssi* 'orange,' *ruskea* 'brown,' *harmaa* 'grey,' and *vaaleanpunainen* 'pink'. These results contrast with Mauno Koski's claim that there are only 8 basic colour terms in Finnish. However, both studies agree that Finnish does not possess a basic colour term for purple.

1. Introduction

Basic colour terms are a relatively well studied area of vocabulary and 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 basic colour terms in all languages are drawn from a universal inventory of just 11 colour categories (see Figure 1). According to their theory, every language has between 2 and 11 basic colour terms, and 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

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WHITE (capitals denote the hypothetically universal colour categories); the third term to be aquired 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, then it should also already entail all the earlier basic colour terms of the hierarchy.

[white]				[green]	→	[yellow]								[purple]
	→	[red]	→					→	[blue]	→	[brown]	→		[pink]
[black]				[yellow]	→	[green]								[orange]
														[grey]
I		II		III		IV		V		VI		VII		

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

This hierarchy 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: 5–7) and will be used in this article accordingly (some examples from Finnish are added):

1) It is monolexemic; that is, its meaning is not predictable from the meaning of its parts, e.g. the colour name *harmaa* 'grey' in Finnish;
2) Its signification is not included in that of any other colour term, e.g. *ruusunpunainen* 'rose red' and *viininpunainen* 'wine red,' which are two kinds of red for most speakers of Finnish;
3) Its application is not included in that of any other colour term, e.g. *kastanja* 'chestnut,' which may be predicated only for hair;
4) It must be psychologically salient for informants. Indices of psychological salience include, among others, a) a tendency to occur at the beginning of elicited lists of colour terms, b) stability of reference across informants and occasions of use, c) occurrence within the idiolects of all informants. Examples of this criterion may be *punainen* 'red,' *keltainen* 'yellow,' etc.

The above list consists of what are considered the primary criteria. When the colour name is still in doubt, the following subsidiary criteria should also be considered:

5) The dubious form should have the same distributional potential as the previously established basic terms;

6) Colour terms that are also names of an object are suspect. This criterion would exclude *orange* in English, if it were a dubious case on the basic criteria (1)–(4). Some Finnish examples are *persikka* 'peach' and *luumu* 'plum'.
7) Recent foreign loanwords may be suspect, e.g *kretliini* 'violet'.
8) In cases where lexemic status is difficult to access [criterion (1)], morphological complexity is given some weight as a secondary criterion. For example, the Finnish term *sinivihreä* 'blue green' might be eliminated by this criterion.

Berlin and Kay studied 98 languages in total, and they also collected primary experimental data for 20 languages. The only Finno-Ugric (Uralic) language represented in their study was Hungarian, which they erroneously classified as Altaic, and they suggested that it has, exceptionally, 12 basic colour terms, including two reds—*piros* and *vörös* (which they glossed to English as *light red* and *dark red*, respectively) (Berlin and Kay 1969: 35–36). However, as was often the trouble with their field work, the number of subjects was insufficient (in fact they only had one Hungarian subject). Uusküla and Sutrop have subsequently carried out a field study with 125 Hungarian native speakers, the results of which have allowed them to argue that in fact there are 11, and not 12 basic colour terms in Hungarian (Uusküla and Sutrop 2007, Bogatkin-Uusküla and Sutrop 2005a).

In 1983, Mauno Koski discussed Berlin and Kay's theory with reference to the Finnish language. His seminal monograph explored all Finnic languages, including Finnish, Estonian, South Estonian, Livonian, Karelian, Ludic, Veps, Votic and Ingrian. Koski made the first attempt to investigate the inventory of basic colour terms in Finnic languages, also categorising wide etymologies of colour names and colour verbs. However, he only worked with dictionaries and dialect collections, without employing any field methods.

The first empirical study of a Finno-Ugric language, carried out with a sufficient number of subjects (80), using precise colour stimuli and set within the theoretical framework provided by Berlin and Kay, was a study of the Estonian language undertaken by Urmas Sutrop (1995, 2000a, 2002). According to Sutrop, Estonian possesses exactly 11 basic colour terms—*must* 'black,' *valge* 'white,' *punane* 'red,' *kollane* 'yellow,' *roheline* 'green,' *sinine* 'blue,' *pruun* 'brown,' *hall* 'grey,' *lilla* 'purple,' *roosa* 'pink' and *oranž* 'orange'. Koski, however, had proposed that there are only 10 basic colour terms in Estonian, excluding the term *oranž* 'orange'

from his list of basic terms (Koski 1983). Recently, as mentioned above, Hungarian has also been studied empirically (Bogatkin-Uusküla and Sutrop 2005a, Uusküla and Sutrop 2007). Some examples of Finno-Ugric colour term studies carried out with other methods include: 1) a minor empirical study of Mansi (Vogul), a Ugric language (Sipőcz 1994), which is mainly based on literature, although 50 non-standard colour circles were shown to three female native speakers who were asked to name the colour; 2) a linguistic study on the colour terminology of Estonian dialects (Oja 2001); 3) a linguistic study on Moksha Mordvin (Turunen 2002).

To date, Finnish colour terms have not been investigated with field methods. Since the method for establishing basic colour terms used by Berlin and Kay is very complicated and time-consuming when used on a large, albeit sufficient, 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). This makes the interviews easier to conduct and limits them to approximately 20–40 minutes each, depending on the language. Many European languages, like Russian (Davies and Corbett 1994), English (Davies and Corbett 1995), Estonian (Sutrop 1995, 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 of Finnish with a particular interest in whether there are 11 basic colour terms or only 8 basic terms—*valkoinen* (*valkea*) 'white,' *musta* 'black,' *punainen* 'red,' *vihreä* 'green,' *keltainen* 'yellow,' *sininen* 'blue,' *ruskea* 'brown,' *harmaa* 'grey'—as Koski has argued (1983). No experimental study has yet been carried out to examine which of the two terms *valkoinen* and *valkea* is the basic term for white, or whether the colour terms *violetti* 'purple' and *oranssi* 'orange' are basic colour terms, or whether there is a basic term to indicate pink colour in Finnish. The method of Davies and Corbett was complemented with the cognitive salience index, which for a colour term is calculated from its frequency and mean position, and which can also be used to discriminate basic terms from non-basic ones (Sutrop 2001, 2002: 35).

2. Case study: Finnish colour terms

Language: Finnish, Finnic, Finno-Ugric, Uralic.

Regions where the data have been collected: Helsinki, Turku, Lempäälä, Espoo and Tuusula, all in Finland.

Dates: 1–7 August 2005 (Helsinki, Turku and Lempäälä); 7–14 September 2006 (Helsinki, Espoo and Tuusula).

Subjects: There were 68 subjects in total[2], 42 female and 26 male, whose age ranged from 11 to 75, with a mean of 39.5 years. The age of men ranged from 10 to 75 years with a mean of 41.4 years, and the age of women ranged from 11 to 70 years with a mean of 38.4 years.

In 2005 I interviewed 29 subjects, 19 of which were female and 10 male, their age ranging from 11 to 75, with a mean of 42.7 years. The age of men ranged from 16 to 75 with a mean of 44.9 years, and the age of women ranged from 11 to 68 with a mean of 41.5 years.

In 2006 I interviewed 39 subjects in total, 23 female and 16 male, whose age ranged from 10 to 70 with a mean of 37.2 years. The women's age ranged from 17 to 70 with a mean of 35.8 years and the men's age ranged from 10 to 70 with a mean of 39.2 years.

The subjects were from the following locations (in alphabetical order): Espoo, Helsinki, Hämeenlinna, Impilahti, Jyväskylä, Lohja, Kaarina, Kiiminki, Kirkkonummi, Korppilahti, Kouvola, Lempäälä, Mikkeli, Mouhijärvi, Orimattila, Oulainen, Oulu, Pieksämäki, Pori, Riihimäki, Rovaniemi, Salo, Savo, Savonlinna, Sipoo, Sääksjärvi, Tampere, Turku, Tyrvää, Urjala, Uusikaupunki, Vaasa, Vammala, Vantaa, Viipuri, and Äänekoski.

All the subjects were native speakers of Finnish, with different dialect backgrounds; some of the subjects were unable to name their dialect, but aware that they spoke "somewhat dialectally". One subject used Finnish Sign Language to communicate with her parents. All the subjects completed the list task first and then the colour naming task. The subjects were not informed, until the beginning of the test, that the questions would refer to colours and colour terms.

[2] In fact there were 69 subjects in total. One subject did not have a normal colour vision, which was tested by using *The City University Color Vision Test* (Fletcher 1980). Throughout this study only the responses of subjects with normal colour-seeing ability are considered.

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: Finnish.

3. Methods

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

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

The colour naming task. The subjects were shown the 65 colour-squares (tiles), 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: 'What colour is that?' in Finnish. 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 x 5 cm sized wooden square covered with coloured paper. These colours had been 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 a 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, in which the share of tint (share of white) increases pro rata, and into three dark variants S1–S3, where the shade (share of black) increases. In addition, some extra-system colours have been used, such as Sienna and Rose Red. Co-ordinates CIE[3] of the 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).

4. Finnish colour terms: results

In this section the results of the Finnish 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.

The subjects named 5876 Finnish colour terms, among which 1014 were different. All the compound names, of different types of connection, provided by the subjects were referred to by different names (e.g. *vaalea-vihreä* 'light green' and *vaalean-vihreä*[4] 'light green,' *kirkas-punainen* 'bright red' and *kirkkaan-punainen* 'brightish-red,' *lehden-vihreä* 'leafish green' and *lehti-vihreä* 'leaf green'). The phonetic variants like *liila* and *lila* 'lilac' or 'purple,' *beige* and *beessi*[5] 'beige' are also treated separately.

4.1 The list task

In the list task the subjects named 1506 colour terms in all, among them 332 different ones. The average list of named colours contained 13.47 entries. The lowest numbers of colour names which came to the subjects' minds were 8 and 9, offered respectively by a 75-year-old pensioner and a 52-year-old consultant (both were men). The most colour terms, 53, were offered by a 68-year-old retired woman, who had taught Finnish at

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

[4] For the purposes of easier reading and convenience, composite colour names are written here with a hyphen [-], in contrast to the Finnish literary norm, and in order to show the concrete meaning of the composite parts of the compound (sometimes the hyphen is omitted, i.e. the enclitic variant is used).

[5] The forms *lila* 'lilac; purple' and *beessi* 'beige' differ from the Finnish literary norm, but are used in spoken language.

university. The second highest number, 50 colour names, was offered by a 69-year-old cameraman. Women 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 for by both men and women was *punainen* 'red' (altogether 27 times). It was followed by *musta* 'black' (10 times) and *sininen* 'blue' (10 times), *valkoinen* 'white' (9 times), and *vihreä* 'green' (4 times). All the colour names named only once are considered odd.

Term	English gloss	Women (42)	Men (26)	Total (68)
punainen	red	18	9	27
musta	black	5	5	10
sininen	blue	5	5	10
valkoinen	white	6	3	9
vihreä	green	2	2	4
keltainen	yellow	3	0	3
liila	purple	2	0	2
oranssi	orange	1	0	1
sini[6]	blue	0	1	1
violetti	purple	0	1	1

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

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.

Term	Gloss	Frequency	Rank	Mean position	Rank	Salience	Rank
punainen	red	66	2	2.44	1	0.398	1
sininen	blue	63	5	3.13	2	0.296	2
vihreä	green	60	9	4.85	3	0.182	3
keltainen	yellow	67	1	5.52	4	0.178	4
musta	black	65	4	5.98	5	0.160	5
valkoinen	white	66	2	7.26	6	0.134	6
oranssi	orange	62	7	9.65	9	0.095	7

[6] Here, only the first part of a colour name *sininen* 'blue' is used. It was named by a person who started his list with colour names without *nen*-endings, such as *sini* instead of *sininen* 'blue' and *puna* instead of *punainen* 'red'.

ruskea	brown	62	7	10.27	12	0.089	8
harmaa	grey	63	5	11.64	14	0.080	9
vaalean-punainen	pink	51	10	9.69	10	0.077	10
violetti	purple	42	11	9.12	8	0.068	11
vaalean-sininen	light blue	40	12	11.83	16	0.050	12
liila	purple	29	13	9.03	7	0.047	13
turkoosi	turquoise	26	14	12.00	17	0.032	14
vaalean-vihreä	light green	23	15	13.00	21	0.026	15
pinkki	pink	16	20	12.50	20	0.019	16
beessi	beige	17	19	13.94	23	0.018	17
tumman-sininen	dark blue	19	16	16.00	30	0.017	18
beige	beige	16	20	13.63	22	0.017	19
lila	purple	9	31	9.67	11	0.014	20
hopea	silver	18	17	19.78	43	0.013	21
kulta	gold	18	17	20.33	45	0.013	22
tumman-punainen	dark red	13	24	14.92	28	0.013	23
viinin-punainen	wine red	10	28	12.10	18	0.012	24
vaalean-ruskea	light brown	14	22	17.50	34	0.012	25
vaalean-keltainen	light yellow	14	22	17.71	35	0.011	26
okra	ochre	10	28	14.20	26	0.010	27
roosa	pink	10	28	14.30	27	0.010	28
taivaan-sininen	sky blue	11	25	16.73	33	0.010	29
tumman-vihreä	dark green	11	25	18.45	38	0.009	30
purppura	purple	7	34	12.14	19	0.008	31
tumman-ruskea	dark brown	11	25	19.55	42	0.008	32
luonnon-valkoinen	natural white	8	32	18.13	36	0.006	33
aniliini	aniline red	5	38	11.60	13	0.006	34
sini-punainen	blue red	5	38	11.80	15	0.006	35
limen-vihreä	lime green	5	38	14.00	24	0.005	36
mintun-vihreä	mint green	5	38	14.00	26	0.005	37
sini-harmaa	blue grey	8	32	23.38	47	0.005	38
koboltin-sininen	cobalt blue	6	36	18.67	39	0.005	39
puna-ruskea	reddish brown	5	38	15.80	29	0.005	40

ruusun-punainen	rose red	5	38	16.20	31	0.005	41
myrkyn-vihreä	poison green	5	38	16.40	32	0.004	42
tumman-harmaa	dark grey	6	36	19.83	44	0.004	43
kupari	copper	7	34	23.71	48	0.004	44
karmiinin-punainen	carmine red	5	38	18.40	37	0.004	45
sini-vihreä	blue green	5	38	19.00	40	0.004	46
vaalean-harmaa	light grey	5	38	19.40	41	0.004	47
sinapin-keltainen	mustard yellow	5	38	21.20	46	0.003	48
sammalen-vihreä	moss green	5	38	25.00	49	0.003	49
pronssi	bronze	5	38	28.40	50	0.003	50

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.

It can be seen that the two parameters—naming frequency and mean position—provide different colour words as candidates for basic colour term status. 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). According to Sutrop, this 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 x mP). The dividend considers the frequency (F) with which a term is named in the list task. The divisor N mP consideres 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 salient 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/her 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". Sutrop's cognitive salience index has also been used to study emotion words in Estonian and Finnish (Vainik 2002, 2006, Tuovila 2005).

In this study, Sutrop's index has been used because it combines the tendency of a basic term to occur at the beginning of the elicited lists (high mean position) with its occurrence in the idiolects of all the subjects (high 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 1). In addition, the cognitive salience index helps us separate possible basic colour terms from the non-basic ones.

The most frequently named colour term is *keltainen* 'yellow,' named by 67 subjects. This term is followed by punainen 'red' and *valkoinen* 'white' (both named 66 times). *Punainen* 'red,' however, occurs at the beginning of the elicited lists (mean position rank 1), while the mean position rank of *valkoinen* 'white' is only 6. Only 12 terms were named by at least half of the subjects (Fr ≥ 34): *punainen* 'red,' *sininen* 'blue,' *vihreä* 'green,' *keltainen* 'yellow,' *musta* 'black,' *valkoinen* 'white,' *oranssi* 'orange,' *ruskea* 'brown,' *harmaa* 'grey,' *vaalean-punainen* 'pink,' *violetti* 'purple' and *vaalean-sininen* 'light blue'.

According to the mean position, the candidates for basic colour term status are *punainen* 'red,' *sininen* 'blue,' *vihreä* 'green,' *keltainen* 'yellow,' *musta* 'black,' *valkoinen* 'white,' *liila* 'purple' (rank 7), *violetti* 'purple,' *oranssi* 'orange,' *vaaleanpunainen* 'pink' and *lila* 'purple' (rank 11),

followed by *ruskea* ‘brown’ (rank 12) and *aniliini* ‘aniline red[7]’ (rank 13). The colour term *harmaa* ‘grey’ remains in rank 14. This denotes the fact that if the 3 non-basic colour terms *liila* ‘purple,’ *lila* ‘purple’ and *aniliini* ‘aniline red’ are named at all, this is done in the middle of the lists.

The most salient terms according to Sutrop’s cognitive salience index in Finnish are *punainen* ‘red,’ *sininen* ‘blue,’ *vihreä* ‘green,’ *keltainen* ‘yellow,’ *musta* ‘black,’ *valkoinen* ‘white,’ *oranssi* ‘orange,’ *ruskea* ‘brown,’ *harmaa* ‘grey,’ *vaaleanpunainen* ‘pink’ and *violetti* ‘purple’. Cognitive salience is repeated in figure 2.

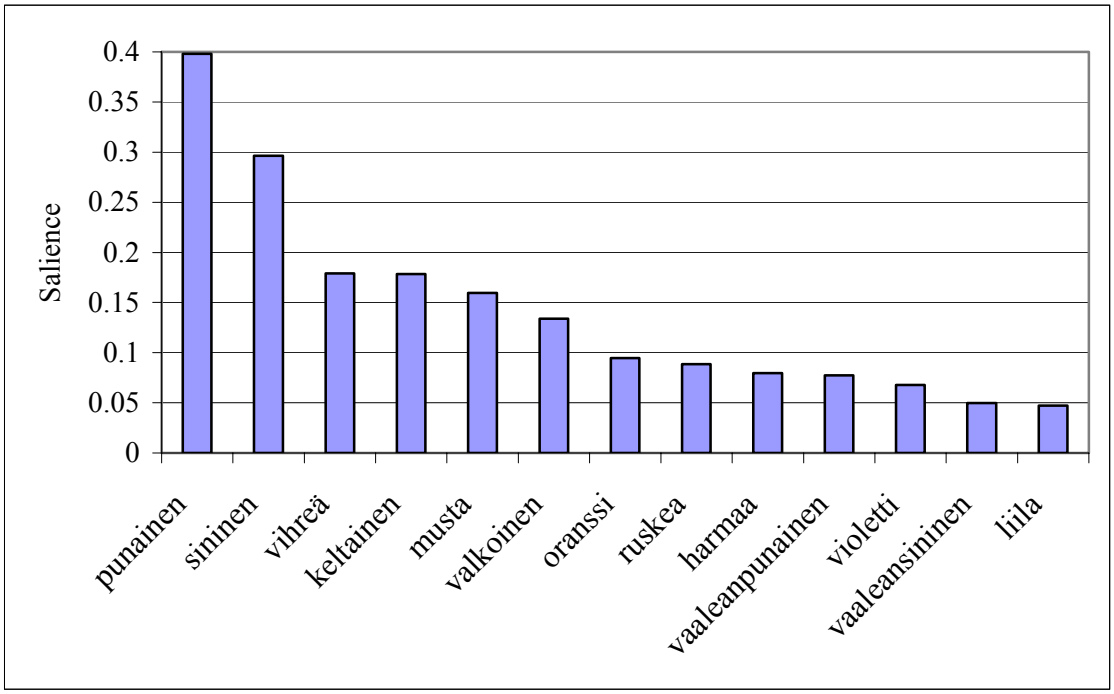

Figure 2. The most salient Finnish colour terms according to the cognitive salience index.

4.2 The colour naming task

In the colour naming task, subjects named the 65 colour squares in 4370 ways, among these there were 855 different terms. Some subjects said that they did not know the name for some given tile on 50 occasions: eleven subjects did not know how to name the colour tile with the Color Aid code ORO T3 (mostly *vaalea-oranssi* ‘light orange’), eight subjects did not name the colour tile YOY S2 (mostly *beessi* ‘beige’), etc. On average, 24.3

[7] Also known as *magenta* in English.

different names were given for each tile. In general, men had more difficulty with naming the colour tiles than women, which combines very well with earlier studies about English colour terms (such as Rich 1977, Swaringen et al. 1978, Simpson and Tarrant 1991). Men's colour vocabulary was usually smaller than women's. Although they did not use the colour terms inaccurately, they tended to name colour tiles with basic colour terms, i.e. they did not specify whether the colour was light or dark, rich or pale, etc. When women said that one tile was *vaaleansininen* 'light blue,' men just mentioned it was *sininen* 'blue,' because the lightness or darkness of the tile seemed irrelevant to them. The male subjects also rarely used colour terms connected with fashion trends, like *persikka* 'peach,' *luumu* 'plum,' *lime* 'lime,' *pinkki* 'pink,' *roosa* 'pink,' etc. These colour names are probably familiar to women from mail order fashion catalogues, where many new colour terms are invented.

Table 3 shows the distribution of the most frequent terms given to each tile with the number of subjects who used each term in the Ostwald colour space.

Code	Hue	Fr		Tint	Fr		Shadow	Fr
Y	keltainen *'yellow'*	57				S2	ruskea *'brown'*	14
	kirkkaan-keltainen *'bright yellow'*	7					vaalean-ruskea *'light brown'*	5
YOY	keltainen *'yellow'*	37	T4	vaalean-keltainen *'light yellow'*	16	S2	beessi *'beige'*	4
	tumman-keltainen *'dark yellow'*	7		beige *'beige'*	4		beige *'beige'*	4
YO	oranssi *'orange'*	24	T3	vaalean-keltainen *'light yellow'*	13	S3	ruskea *'brown'*	36
	keltainen *'yellow'*	6		beige *'beige'*	4		tumman-ruskea *'dark brown'*	3
OYO	oranssi *'orange'*	49						
	kirkas-oranssi *'bright yellow'*	3						
O	oranssi *'orange'*	41				S1	ruskea *'brown'*	30
	oranssin-punainen *'orange red'*	4					vaalean-ruskea *'light brown'*	5
	tumma-oranssi *'dark orange'*	4				S3	ruskea *'brown'*	35
							tumman-ruskea *'dark brown'*	6
ORO	oranssi *'orange'*	14	T3	vaalea-oranssi *'light orange'*	14	S3	vaalean-punainen *'pink'*	15
	oranssin-punainen *'orange red'*	13		persikka *'peach'*	8		roosa *'pink'*	5
	punainen *'red'*	13						
RO	punainen *'red'*	46	T3	vaalean-punainen *'pink'*	28	S3	ruskea *'brown'*	25
	kirkkaan-punainen *'bright red'*	5		roosa *'pink'*	4		tumman-ruskea *'dark brown'*	19
ROR	punainen *'red'*	40	T3	vaalean-punainen *'pink'*	30	S3	vaalean-punainen *'pink'*	22
	tumman-punainen *'dark red'*	6		pinkki *'pink'*	5		roosa *'pink'*	4
R	punainen *'red'*	23	T4	vaalean-punainen *'pink'*	39	S3	ruskea *'brown'*	18
	karmiinin-punainen *'carmine red'*	4		pinkki *'pink'*	7		tumman-ruskea *'dark brown'*	18
	vadelman-punainen *'raspberry red'*	4					tumma-ruskea *'dark brown'*	8
	viinin-punainen *'wine red'*	4						
RVR	pinkki *'pink'*	8				S1	violetti *'purple'*	16
	punainen *'red'*	6					liila *'purple'*	8
						S3	vaalean-punainen *'pink'*	13

Code	Hue	Fr		Tint	Fr		Shadow	Fr
							liila *'purple'*	5
							vaalea-liila *'light purple'*	5
							vaalean-liila *'light purple'*	5
RV	violetti *'purple'*	20	T2	liila *'purple'*	11			
	liila *'purple'*	16		pinkki *'pink'*	8			
VRV	violetti *'purple'*	26				S3	vaalea-liila *'light purple'*	11
	liila *'purple'*	13					vaalea-violetti *'light purple'*	8
							violetti *'purple'*	8
V	violetti *'purple'*	21						
	liila *'purple'*	14						
VBV	violetti *'purple'*	25	T4	vaalea-liila *'light purple'*	12			
	liila *'purple'*	12		vaalean-liila *'light purple'*	8			
BV	sininen *'blue'*	16				S2	tumman-sininen *'dark blue'*	21
	tumman-sininen *'dark blue'*	12					violetti *'purple'*	9
BVB	sininen *'blue'*	38				S3	harmaa *'grey'*	13
	kirkkaan-sininen *'bright blue'*	5					sini-harmaa *'blue grey'*	7
B	sininen *'blue'*	36	T1	sininen *'blue'*	29			
	kirkkaan-sininen *'bright blue'*	7		taivaan-sininen *'sky blue'*	10			
BGB	sininen *'blue'*	28	T3	vaalean-sininen *'light blue'*	43			
	taivaan-sininen *'sky blue'*	8		turkoosi *'turqoise'*	5			
BG	turkoosi *'turqoise'*	22	T1	turkoosi *'turqoise'*	25	S2	sini-vihreä *'blue green'*	10
	sininen *'blue'*	11		sininen *'blue'*	10		vihreä *'green'*	9
GBG	vihreä *'green'*	23				S2	vaalea-turkoosi *'light turqoise'*	9
	turkoosi *'turqoise'*	11					turkoosi *'turqoise'*	8
							vaalean-sininen *'light blue'*	8

Code	Hue	Fr		Tint	Fr		Shadow	Fr
G	vihreä *'green'*	42				S3	tumman-vihreä *'dark green'*	32
	sini-vihreä *'blue green'*	3					tumma-vihreä *'dark green'*	11
GYG	vihreä *'green'*	40	T4	vaalean-vihreä *'light green'*	21	S1	vihreä *'green'*	21
	kirkkaan-vihreä *'light green'*	5		mintun-vihreä *'mint green'*	9		vaalean-vihreä *'light green'*	11
				vaalea-vihreä *'light green'*	9			
YG	vihreä *'green'*	13				S3	tumman-vihreä *'dark green'*	15
	vaalean-vihreä *'light green'*	12					vihreä *'green'*	9
YGY	vaalean-vihreä *'light green'*	14				S3	vaalean-vihreä *'light green'*	27
	vaalea-vihreä *'light green'*	10					vaalea-vihreä *'light green'*	14

Unsystematic hues

ROSE RED		GRAY 2	harmaa *'grey'*	19
punainen *'red'*	9		vaalean-harmaa *'light grey'*	16
pinkki *'pink'*	7		vaalea-harmaa *'light grey'*	12
karmiinin-punainen *'carmine red'*	3	GRAY 4		
			harmaa *'grey'*	46
SIENNA BROWN			vaalean-harmaa *'light grey'*	10
ruskea *'brown'*	19	GRAY 6		
puna-ruskea *'reddish brown'*	9		harmaa *'grey'*	42
tiilen-ruskea *'brick brown'*	5		tumman-harmaa *'dark grey'*	10
		GRAY 8		
Achromatic hues			musta *'black'*	37
			tumman-harmaa *'dark grey'*	8
GRAY 1		BLACK		
valkoinen *'white'*	18		musta *'black'*	58
vaalea-harmaa *'light grey'*	13	WHITE		
vaalean-harmaa *'light grey'*	10		valkoinen *'white'*	49
			maalarin-valkoinen *'house painter's white'*	5

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

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 degree of consensus among the subjects. It can be seen that the most frequent terms have greater consensus than the rest.

According to the frequency measure (Fr > 130)[8], there are 8 candidates for basic term status: *vihreä* 'green,' *sininen* 'blue,' *ruskea* 'brown,' *vaaleanpunainen* 'pink,' *punainen* 'red,' *violetti* 'purple,' *oranssi* 'orange,' and *harmaa* 'grey'. Three other candidates for basic status *musta* 'black,' *valkoinen* 'white' and *keltainen* 'yellow' fail to achieve high levels of frequency. This may be explained by the fact that there were only two colour tiles in the whole colour naming task that subjects could possibly name as yellow (Y and YOY). Moreover, only two tiles could be named black (besides the colour tile BLACK also GRAY 8), and only one was white, but it was not a pure white for Finnish subjects. That is why this tile was not only named by the colour word *valkoinen* 'white,' but was also described by other colour terms, such as *maalarinvalkoinen* 'house painter's white' (5 times), *luonnonvalkoinen* 'nature white' (3 times), *murrettu valkoinen* 'broken white,' *likantunut valkoinen* 'dirty white,' *luunvalkoinen* 'bone white,' *vaalea harmaa* 'light grey' etc. The rationale for the 65 colour sample selection can be found in Davies et al. (1992).

[8] Used for 2 colour tiles on average (2 x 65 = 130).

	Gloss	Total frequency	Dominance frequency	No. of tiles	Frequency/No. of tiles
vihreä	green	193	82	14	13.79
sininen	blue	185	74	11	16.82
ruskea	brown	178	71	8	22.25
vaalean-punainen	pink	158	39	10	15.80
punainen	red	143	86	8	17.88
violetti	purple	141	-	12	11.75
oranssi	orange	133	90	6	22.17
harmaa	grey	130	88	7	18.57
liila	purple	99	-	12	8.25
keltainen	yellow	97	88	6	16.17
musta	black	97	95	4	24.25
vaalean-vihreä	light green	92	-	9	10.22
turkoosi	turquoise	84	-	9	9.33
vaalean-sininen	light blue	79	43	8	9.88
valkoinen	white	77	49	4	19.25
tumman-vihreä	dark green	58	-	6	9.67
vaalea-vihreä	light green	50	-	6	8.33
pinkki	pink	48	-	12	4.00
tumman-ruskea	dark brown	46	-	4	11.50
vaalean-harmaa	light grey	42	-	6	7.00
tumman-sininen	dark blue	40	-	6	6.67
vaalea-liila	light purple	39	-	7	5.57
sini-vihreä	blue green	38	-	7	5.43
lila	purple	33	-	13	2.54
vaalea-harmaa	light grey	32	-	5	6.40
vaalean-keltainen	light yellow	30	-	3	10.00
roosa	pink	29	-	7	4.14
vaalea-violetti	light purple	28	-	9	3.11
taivaan-sininen	sky blue	26	-	5	5.20
vaalean-liila	light purple	25	-	7	3.57
kirkkaan-sininen	bright blue	23	-	5	4.60
tumma-liila	dark purple	23	-	9	2.56

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.

The final column, indicating the frequency/tile ratio, shows the consensus of use. The higher the ratio, the greater the consensus among the subjects. It can be seen that the most frequent terms have greater consensus than the

others. According to the frequency/tile ratio measure (< 15), there are 9 candidates for basic status: *musta* 'black,' *ruskea* 'brown,' *oranssi* 'orange,' *valkoinen* 'white,' *harmaa* 'grey,' *punainen* 'red,' *sininen* 'blue,' *keltainen* 'yellow,' and *vaaleanpunainen* 'pink'. After these 9, there is a gap and only then two candidates for basic status *vihreä* 'green' and *violetti* 'purple' will follow. The reason for that may be the large number of green and purple colour tiles in this task. As can be seen in Table 4, the colour name *vihreä* 'green' was used to name 14 tiles and the colour name *violetti* 'purple' was elicited by 12 colour tiles.

In addition to the naming frequency and frequency/tile ratio the dominance frequency is also presented. A term is considered dominant if at least half of the subjects use the same name for a given tile, which means that the so-called dominance index has to be DI ≥1/2. This 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). The specificity index is the dominant frequency/total frequency ratio at the same level. If the specificity index was 1, all the 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 on different consensus levels for Finnish colour terms is shown in Table 5.

It is possible to consider dominance and specificity indices on different levels of consensus. In this 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 ≥	7	17	23	34	45	51	68

Table 5 shows the dominant colour terms on different consensus levels together with their specificity indices. There is no dominant colour term for any tile at the absolute consensus level in Finnish. The highest is the consensus for the colour term *musta* 'black' (SI = 0.98). Surprisingly, exactly the same holds true for Hungarian colour names where the consensus 0.98 is the highest for the colour term *fekete* 'black' (Uusküla and Sutrop 2007). It is interesting that, when one compares those results with the studies of other languages in the geographic area, which have been carried out using the same method, then for Russian the specificity index is the highest for the colour term *belyj* 'white' (SI = 1, which indicates the absolute consensus among the subjects) (Davies and Corbett 1994: 79). In

Estonian the specificity index is also the highest for the colour term for white, *valge* (SI = 0.99) (Sutrop 1995: 806, 2000a: 160, 2002: 84–85). As can be seen from the Table 5, in Finnish the lowest consensus holds for the colour term *vaaleanpunainen* 'pink' (SI = 0.25). At the same time the colour name *violetti* 'purple' does not have a specificity index at all, because there was no dominant colour tile in the task. The tile the most frequently named as *violetti* was tile VRV—named 26 times, i. e. 38% of all responses. Looking at the SI indices one can see that *vaaleansininen* 'light blue' also has a value in this column (SI = 0.54). This can be explained by the fact that the colour tile BGB T3 was named as *vaaleansininen* by 43 subjects (63% of responses). In-depth discussion of the status of this colour name among others will follow below.

Term	**Gloss**	**SI**	**DI 1/10**	**DI 1/4**	**DI 1/3**	**DI 1/2**	**DI 2/3**	**DI 3/4**
musta	black	0.98	2	2	2	2	1	1
keltainen	yellow	0.91	2	1	1	1	0	0
harmaa	grey	0.68	4	3	2	2	0	0
oranssi	orange	0.68	4	3	3	2	0	0
valkoinen	white	0.64	9	4	3	2	0	0
punainen	red	0.60	5	3	2	1	1	0
vaalean-sininen	light blue	0.54	5	3	3	1	1	0
vihreä	green	0.42	7	5	1	1	0	0
sininen	blue	0.40	7	4	4	1	0	0
ruskea	brown	0.40	9	5	4	1	0	0
vaalean-punainen	pink	0.25	5	2	2	1	0	0
violetti	purple	0.00	5	4	2	0	0	0
liila	purple	0.00	4	0	0	0	0	0
vaalean-violetti	light purple	0.00	4	2	1	0	0	0
turkoosi	turquoise	0.00	4	2	1	0	0	0
tumman-vihreä	dark green	0.00	4	2	1	0	0	0
vaalea-vihreä	light green	0.00	3	2	1	0	0	0
pinkki	pink	0.00	3	2	2	0	0	0
tumman-ruskea	dark brown	0.00	3	2	0	0	0	0
vaalean-harmaa	light grey	0.00	3	1	1	0	0	0
tumman-sininen	dark blue	0.00	3	0	0	0	0	0
vaalea-liila	light purple	0.00	2	0	0	0	0	0

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

Looking at the lowest consensus level (threshold DI 1/10) it can be seen that 64 tiles have a dominant colour term. The only tile which does not have a dominant term is YOY S2, while both *beessi* 'beige' and *beige*

'beige' are named 4 times (not 7). On the 25% consensus level (DI 1/4) one can find 44 tiles with 17 dominant names. On the 50 % consensus level (DI 1/2) there are only 19 tiles with 11 dominant colour names, which are the most probable candidates for basic term status: *musta* 'black,' *keltainen* 'yellow,' *harmaa* 'grey,' *oranssi* 'orange,' *valkoinen* 'white,' *punainen* 'red,' *vaaleansininen* 'light blue,' *vihreä* 'green,' *sininen* 'blue,' *ruskea* 'brown,' and *vaaleanpunainen* 'pink'. As has been argued before, the 50 % threshold is not exceeded by the colour name *violetti* 'purple'. *Violetti* is the most probable candidate for purple category, while Finnish also has other colour names to fill in this gap, like *liila* and *lila* 'purple,' *retliini* and *retuliini* 'purple,' and *sinipunainen* 'bluish red' (means also purple) (see Section 4.3 for this issue). On the next, 67 % consensus level (DI 2/3) there is only 1 tile—BLACK with the colour name *musta* 'black'.

If the specificity index at the 50 % consensus level is taken, there would be 10 candidates for basic status; the threshold SI 1/2 > 0.30.

4.3 Combined results and discussion

In the list and the colour naming task the subjects named 1014 different colour terms. Of the 332 terms listed in the first list task, 167 were never used in the colour naming task (including *hopea* 'silver,' *kulta* 'gold' and *pronssi* 'bronze'). On the other hand, in the colour naming task the subjects used 669 new different colour names not listed in the first task. Morphologically, there were 2711 monolexemic terms (101 different) and 3165 compound terms of which 913 were different (including *vaaleanpunainen* 'pink'), named in the two tasks.

As a preliminary result, 12 candidates fulfilled at least one criterion according to the different tasks and measures. These account for 85 % of the total responses (2304) in the list and the colour naming task (including *violetti* 'purple,' *vaaleanpunainen* 'pink' and *vaaleansininen* 'light blue'). There are 11 standard terms: *musta* 'black,' *valkoinen* 'white,' *punainen* 'red,' *keltainen* 'yellow,' *vihreä* 'green,' *sininen* 'blue,' *ruskea* 'brown,' *oranssi* 'orange,' *harmaa* 'grey,' *vaaleanpunainen* 'pink,' *violetti* 'purple,' and one complex term *vaaleansininen* 'light blue'. All the other terms suspected to have a (nearly) basic term status, like *sinipunainen*, *kretliini* and *valkea* (Koski (1983) treats them as respective synonyms for purple and white in his monograph), *pinkki* 'pink,' *roosa* 'pink,' *turkoosi* 'turquoise' and *beige* 'beige' (which are discussed often by Koski (1983)), *liila* and *lila* 'lilac, purple' (a relatively high frequency in the list task), and

tummanvihreä ‘dark green,’ *vaaleanvihreä* ‘light green,’ *tummansininen* ‘dark blue’ (a relatively high frequency in the colour naming task), do not meet any of the criteria established above (see Table 7).

All previous results for establishing basic colour terms in Finnish have been combined and the established terms, ordered according to their level of basicness, are presented in Table 7. The current analysis of the combined results was carried out with the same methods as in the case of basic colour terms of Estonian (Sutrop 1995, 2000a, 2002). In the list task, the naming frequency (Fr ≥ 40) and mean position (mp < 8), and in the colour naming task, the naming frequency (Fr ≥ 130), dominance index (DI 1/2 ≥ 1), and specificity index (SI > 0.20) are considered, measured against given numerical values as thresholds which have to be superseded. The salience index is not included here because it depends on the frequency and mean position of the term in the list task.

The last column of Table 7 shows the sums of these criteria, the value of which for one colour term could be from 0 to 5. The higher this number, the more certain the status of the colour term as basic. In other words, it shows the terms’ level of basicness.

		List task		**Colour naming task**			**Sum of**
Term	**Gloss**	Fr > 40	Mp < 8	Fr ≥ 130	DI 1/2≥1	SI > 0.2	**criteria**
punainen	red	+	+	+	+	+	5
vihreä	green	+	+	+	+	+	5
sininen	blue	+	+	+	+	+	5
musta	black	+	+	-	+	+	4
valkoinen	white	+	+	-	+	+	4
keltainen	yellow	+	+	-	+	+	4
ruskea	brown	+	-	+	+	+	4
oranssi	orange	+	-	+	+	+	4
harmaa	grey	+	-	+	+	+	4
vaaleanpunainen	pink	+	-	+	+	+	4
vaaleansininen	light blue	+	-	-	+	+	3
violetti	purple	+	-	+	-	-	2
liila	purple	-	-	-	-	-	0
turkoosi	turquoise	-	-	-	-	-	0
beige	beige	-	-	-	-	-	0

Table 7. Summary of the results where colour terms are ranged according to the level of basicness. Fr–naming frequency, mp–mean position, DI–dominance index, SI–specificity index.

The most salient colour terms in Finnish are *punainen* ‘red,’ *sininen* ‘blue’ and *vihreä* ‘green’ (those terms superseded all 5 thresholds). 4 thresholds are superseded by the colour terms *musta* ‘black,’ *valkoinen* ‘white,’

keltainen 'yellow,' *ruskea* 'brown,' *harmaa* 'grey,' *vaaleanpunainen* 'pink,' and *oranssi* 'orange'.

At this point it is relevant to note that *oranssi* has been adapted to modern Finnish as a basic colour term, in contrast to what Koski has proposed (1983: 265). In Finnish, the colour name *oranssi* does not mean orange (fruit) as it does in English[9]. This colour term has been displaced by another term, *appelsiini* 'orange'. There is only one possible reason why colour term *oranssi* could not be a basic term according to the criteria of Berlin and Kay: namely, it is a late loanword borrowed into Finnish in the early 20th century through Swedish. However, that criterion could be circumvented, while it is considered only as subsidiary (Berlin and Kay 1969: 6–7).

Before making a final decision about the colour name *vaaleanpunainen* 'pink,' literally 'light red'[10] Berlin and Kay's criteria for basicness should be reconsidered (1969: 5–7). The first criterion by Berlin and Kay prescribes that a basic term must be monolexemic; that is, its meaning should not be predictable from the meaning of its parts. Thus, Finnish *vaaleanpunainen* (*vaalea* 'light' and *punainen* 'red') being a compound word, cannot be a basic colour term according to this linguistic criterion. Nevertheless, its meaning is, indeed, independent from the meanings of its parts, because there were no subjects who named light red with this term. Instead, other terms to indicate light red were used, like *heleä punainen* 'light red'. Colour term *vaaleanpunainen* 'pink' also occurred in such compounds as *tumma-vaaleanpunainen* 'dark pink' and *vaalea-vaaleanpunainen* 'light pink' which clearly shows that it is thought as a new concept—pink colour. According to the dictionaries such as Alanne (1982) or Hurme and Pesonen (1986), *vaaleanpunainen* in translated to English only as *pink* (and vice versa), never as *light red*, although the meaning of *vaalean-* is given as *light* or *pale*.

Berlin and Kay's original characteristics have been critizised, rearranged and given different weights by T. D. Crawford (1982), A. E. Moss (1989), Jerome Smith et al. (1995) and others. They have argued that it may be useful to distinguish between psychological—or perceptual—

[9] In English the word *orange* means both fruit and colour, although it is not clear for every native speaker which of the two meanings is the first. This is the only basic colour term in English considered transparent, while the other basic colour terms are opaque.

[10] Etymologically *vaalea(n-)* is derived from *valkea* 'white, light,' thus its meaning might be 'white red' which corresponds to pink colour.

basicness and linguistic basicness. For instance, Crawford, in his revision of the original criteria has rejected all linguistic criteria.

Thus, Crawford (1982: 342) argues: "A basic colour term occurs in the idiolects of all informants. It has stability of reference across informants and across occasions of use. Its signification is not included in that of any other colour term. Its application is not restricted to a narrow class of objects".

By those criteria *vaaleanpunainen* is, indeed, a basic colour term: it belongs to the idiolects of all informants, it has stability of reference across informants and across occasions of use (in the colour naming task more than 50 % of the subjects named colour tile R T4 with that name); its use is not restricted to a narrow class of objects and its signification is not included in that of any other colour term, and it is cognitively salient as is shown by the salience index (see Table 2). Hence, it could be argued that in Finnish *vaaleanpunainen* 'pink' is a basic term psychologically, like *narancssárga* 'orange' (literally 'orange-yellow,' from *narancs* 'orange' and *sárga* 'yellow') in Hungarian.[11] All other colour terms (inter alia monolexemic ones) that could be used to refer to the category of pink in Finnish, like *roosa* 'pink' and *pinkki* 'pink,' do not meet any criteria set up for the basic term.

Three thresholds in Table 7 (naming frequency in the list task, dominance and specificity indices in the colour naming task) are superseded by a colour term *vaaleansininen* 'light blue'. It is possible that this term strives for basic status, because it forms a symmetrical pair with colour name *vaaleanpunainen* 'pink'. The same phenomenon was found in Hungarian, where the status of the basic colour term *sárga* 'yellow' is extremely weak, while another colour name *citromsárga* 'lemon-yellow' tends to replace it in order to make a symmetrical pair with the basic colour term *narancssárga* 'orange, literally 'orange-yellow' (Bogatkin-Uusküla and Sutrop 2005b: 97). However, in Finnish *vaaleansininen* 'light blue' does not appear to substitute for the basic colour term *sininen* 'blue,' but it lays claim to the 11th place among basic colour terms, which position should, according to Berlin and Kay's theory, rather be occupied by a term for purple, i.e. one of the following: *violetti*, *liila* (or *lila*), *kretliini* (*retliini*), *sinipunainen*.[12]

[11] For more about Hungarian colour names see Uusküla and Sutrop 2007.

[12] The reason why there are so many terms for purple in Finnish might be explained by the fact that none of these terms have a strong basic status. There are also meaning

It is also possible that the meaning of colour name *sininen* 'blue' will change in time, so that it refers to a darker colour than presently, and thus a need will arise for an additional basic colour term—*vaaleansininen* 'light blue,' which would then refer to a lighter region of the blue spectrum .[13]

There are many languages in which two (basic) colour terms are used for blue, amongst them Russian, which has *sinij* '(dark) blue' and *goluboj* 'light (cold) blue' for blue, and therefore 12 basic colour terms in total[14] (Davies and Corbett 1994); Turkish has two terms for blue: *lacivert* 'dark blue' and *mavi* 'blue' (Özgen and Davies 1998); Italian has three terms for blue: *blu* 'blue,' *azzurro* 'azure' and *celeste* 'sky blue' (Kristol 1979, 1980), of which, according to Philip, two are basic colour terms: *blu* 'dark blue' and *azzurro* 'light blue' (Philip 2006: 61–62).

As far as *vaaleansininen* 'light blue' in Finnish is concerned, basic status is far from certain—the cognitive salience index places it 12th after a big gap. Unlike *vaaleanpunainen* 'pink,' the meaning of which is cognitively not predicted from its parts (linguistically it means *light* + *red*, but it is not used in this sense at all), *vaaleansininen* still clearly denotes light blue, because it is used only of light blue tiles in the colour naming task. As was already argued above, linguistic complexity of a term does not have to possess heavy weight if it can be considered as a basic term psychologically (for more on basic terms, see Sutrop 2000b).

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differences. According to "Uusi suomi-englanti suursanakirja" 1984 [New Finnish-English Dictionary] (Hurme et al.) *liila* translates to English as *lilac* (also in the colour naming task subjects named light purple tiles mostly with that name or modifying it with *vaalea(n)-* 'light'). According to the same dictionary colour names *violetti*, *(k)retliini* and *sinipunainen* should all be translated into English as *violet*, not *purple*. The only name that could be translated as *purple* among these is *sinipunainen*. In this article, all terms are translated into English as purple in order to emphasise their equal chance to establish themselves as the basic term.

[13] Hereby it should be stated that two closely related languages Finnish and Estonian (both studied with the same method) have a different prototypical blue. While for Finnish it lays in colour tile BVB (56 % of total answers), for Estonian it is colour tile B (64 % of total answers). At this point I find it relevant to explain the difference between Uusküla (2006) and the present study where, according to the answers of 29 subjects I have suggested that prototypical blue in Finnish is a colour tile B. It clearly shows how different number of subjects can give different results.

[14] Russian also has many terms for purple, e. g. *fioletovyj* 'purple,' *sirenevyj* 'mauve,' *lilovyj* 'lilac'. Among these *fioletovyj* 'purple' is considered as basic (see Davies and Corbett 1994: 80–86).

Vaaleansininen ‘light blue’ should therefore not be regarded as a basic colour term in Finnish and should rather be regarded as an anomaly.

Only two thresholds (naming frequency in the list task and frequency in colour naming task) in Table 7 are superseded by the colour term *violetti*, which has been glossed as *purple* throughout this article, although its better meaning in English would be *violet* as given in Hurme et al. (1984). The basic status of this colour name seems to be rather questionable. When considering the cognitive salience index (see Table 2), *violetti* might be a basic colour term, as we find it on the 11th place. While there is also another colour term for purple in Finnish—*liila* whose preferable meaning in English would be ‘lilac’[15]—these colour terms were put to a simple test.

In the present article, two phonetic variants of *liila*—*liila* and *lila* ‘lilac’—are counted as different words in order to show the exact responses of the subjects. If these two variants were counted as one word—under the colour name *liila*—somewhat different results would be obtained. According to that, naming frequency of *liila* in the list task would be 38 (*liila* has been offered 29 times and *lila* 9 times) and the salience index would score much higher—0.062, instead of the present 0.050 (see Table 2 thereinbefore). One can see that this calculation would raise *liila* to the 12th place instead of the present 13th, but not higher, so that *violetti* would still be the most salient term for the category of purple.

In the colour naming task there was no consensus about which colour tile could be referred to with the colour name *violetti*. The tile most frequently named with that term was the tile VRV (violet-red-violet) (26 times out of 68) and the next one was the tile VBV (violet-blue-violet) (25 times out of 68). Dominance (which is calculated so that at least 50 % of the subjects must name one colour tile with a certain colour term) is one of the most important criteria to establish for basic colour term. While the colour name *violetti* is not a dominant colour name for any of the colour tiles, it does not have a specificity index either. Hence, *violetti* should not be counted as a basic colour term, indicating that there is no basic colour word for the category of purple in Finnish at all. These considerations arise from the data analysed in this study: clearly, more fieldwork might need be

[15] As referred to before, languages with more than one (basic) colour term for blue usually also contain more than one colour name for purple (Corbett and Morgan 1988, Moss 1989, Morgan and Corbett 1989, Davies et al. 1995). Problems appear when attempts are made to gloss those terms amongst languages (see Davies and Corbett 1994, Davies et al. 1995).

carried out in the future, as a greater number of interviews may provide somewhat different results.

The findings from the list and the colour naming task converge to suggest that Finnish has 10 basic colour terms and it does not have a basic term for purple, thus differing from Berlin and Kay's list of 11 universal terms (see Table 8). According to Mauno Koski, whose only sources where dictionaries and dialect collections, the Finnish colour term inventory contains 8 basic terms—he excludes *violetti* 'purple,' *oranssi* 'orange' and *vaaleanpunainen* 'pink' (Koski 1983: 265). According to the present study, however, the last two colour names—*oranssi* 'orange' and *vaaleanpunainen* 'pink'—are in fact basic terms. The basic colour term for white in Finnish is *valkoinen* 'white,' not *valkea* 'light,' which, to some extent, have been treated synonymically by Koski and Todorova (Koski 1983, Todorova 1991). Actually, the meaning of this word could also be glossed to English as 'light, lightness; fire' (see Tuomi 1966 about its etymology). In spite of that, there are some expressions where *valkea* functions as a colour name, like *valkeissa vaatteissa* 'dressed in white' etc. (although *valkoisissa vaatteissa* 'dressed in white' is more usual). None of the subjects in the present study used this word as a simple word either in the list or in the colour naming task. It only occurred 4 times in compounds *lumi-valkea* 'snow white,' *maidon-valkea* 'milk white,' *puhtaan-valkea* 'pure white,' and *hopea-valkea* 'silver white'.

English gloss	**Mauno Koski (1983)**	**Present study**
white	valkoinen	valkoinen
black	musta	musta
red	punainen	punainen
green	vihreä	vihreä
yellow	keltainen	keltainen
blue	sininen	sininen
brown	ruskea	ruskea
orange	(oranssi)	oranssi
grey	harmaa	harmaa
pink	-	vaaleanpunainen
purple	(violetti)	-

Table 8. Basic colour terms in Finnish ranged by Berlin and Kay's original basic colour term order.

5. Summary and conclusion

In the list and colour naming tasks 68 subjects named 5876 colour terms of which 1014 were different. In the list task there were 1506 terms offered in total, out of which 332 were different. In the colour naming task the subjects gave 4370 colour names to 65 colour squares. Among these there were 855 different names.

There are 10 basic colour terms in Finnish. Ranged top-down by cognitive salience index they are the following: *punainen* 'red,' *sininen* 'blue,' *vihreä* 'green,' *keltainen* 'yellow,' *musta* 'black,' *valkoinen* 'white,' *oranssi* 'orange,' *ruskea* 'brown,' *harmaa* 'grey' and *vaaleanpunainen* 'pink'. The colour name *oranssi* 'orange' is adjusted to modern Finnish. The basic colour term for category of pink in Finnish is *vaaleanpunainen* 'pink,' while the colour term *violetti* 'purple' is not a basic colour term. Thus the Finnish language corresponds to the last, the seventh stage of Berlin and Kay's scheme, but being still on a way to getting basic term for purple. The most probable candidate to fill in that gap in the future is colour term *violetti* 'purple'. Differences between the present study and the basic colour term inventory suggested by Mauno Koski are the following: 1) the colour term *oranssi* 'orange' is a basic colour term, which either means that Koski was mistaken, or that the Finnish language has changed over the past 25 years so that it now possesses a basic term for orange; 2) according to the present study Finnish also has a basic term for pink.

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