

# CLASSIFICATION OF COLOUR-BASED METAPHORICAL TERMS

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The nature of the contemporary technical text has been changing. Traditional conventions of technical text production are not strictly observed, and the boundaries between styles and genres are becoming blurred. The tendencies in the development of technical text have caused changes in the development of technical vocabulary, initiating the on-going process of metaphorization and an extension of meaning of the existing and newly created terms.

The present article mainly aims at the analysis of the tendency for metaphorization of technical terms and at the elaboration of the classification of the colour-based metaphorical terms. The pattern of the colour-based term creation is frequently applied to denote the emerging concepts. The complicated mechanisms underlying the processes of meaning formation, extension or compression are illustrated in the article considering the colour-based ESP terms in English and their possible translation into Latvian.

## INTRODUCTION

Traditionally, technical text was considered to be a relatively static area regulated by a set of norms and conventions. Technical text is often associated with a precise, specific, and stylistically neutral mode of expression aimed at delivering accurate and unambiguous information to the reader, an extensive usage of terminology, absence of expressive vocabulary, and absence of cultural references (cf. Nord 1997).

Contemporary technical text is less formal, more expressive, and is characterized by the tendency for internationalization of vocabulary, the borrowing of non-equivalent lexis, compounding, and the extension of meaning of terms by means of metaphorization. Many texts of the scientific and technical discourse are cross-disciplinary, multi-functional, less formal and all together hybrid. The dynamic changes in the nature of scientific and technical text determine the contemporary processes the scientific and technical language undergoes, and call for new approaches to the analysis of technical terms.

Traditional characteristics of an ideal term imply that it is monosemic within a

particular field, does not have synonyms, is transparent, is free from connotations, and its meaning is unambiguous and not dependent on the context (cf. Wright, Budin 2001). However, contemporary terms do not always meet the traditional requirements put forward by conventional terminology schools often being polysemic, metaphoric, and context-dependent. Metaphoric meaning extension is characteristic of technical vocabulary in all discourse domains.

The complicated processes in the creation, development and application of technical terms are illustrated in the article considering the colour-based lexical items. Colour-based lexical items comprise different aspects of life, including the ideas shared by the individuals of a particular group of people, traditions, customs, beliefs and values. It should be noted that the study of the complicated processes taking place in technical texts changed not only the mechanism of a contemporary term formation, but also the traditional perception of colour iconyms, widening their meanings and extending spheres of their application in both monolingual and multilingual (English-Latvian) communicative settings. The similarities and differences of direct and connotative meanings of the colour-based terms across the languages (translating / comparing / contrasting) are considered in the present article.

## STUDY OF COLOUR TERMS

Colour-based metaphorical terms are very extensively used in both the English and Latvian languages. Colours are the indicators of a person's perception of the world; they can be easily associated with certain emotions they stir in people (black—sorrow, red—emergency, green—safe, white—pure, etc.) and possess different connotations in different cultures. However, in various cultures they can cause different reactions, as some cultures can lack some shades of colours or even particular colours (cf. Nītiņa, Iljinska, Platonova 2008, 182–186).

Thus, in order to standardize and free them of cultural bounds, the so-called eleven basic colours, chosen by Brent Berlin and Paul Kay (1969, 3) are applied for the creation of the terms: *'balts'*—white, *'melns'*—black, *'sarkans'*—red, *'zaļš'*—green, *'dzeltens'*—yellow, *'zils'*—blue, *'brūns'*—brown, *'pelēks'*—grey, *'purpurs'*—purple, *'rozā'*—pink and *'oranžs'*—orange. Colour names are used, as they can illustrate the nuances of the particular meaning in a language, e.g. in Russian there are twelve basic colours as it has the concept of *'голубой'*, which in other languages, including Latvian and English, is designated respectively by the compound, e.g. *'gaiši zils'*—light blue.

The study of colour terms (e.g. Berlin, Kay 1969; Witkowski, Brown 1977; Kay, McDaniel 1978; Wierzbicka 1990; Dedrick 1998) in such disciplines as anthropology, linguistics, and psycholinguistics has a great impact on the research and analysis of the contemporary phenomenon of colour-based metaphorization of technical terms.

Among numerous colour-based terms it is possible to distinguish the terms, which are specific of special technical domains and they are independent of context, as in the course of time they became the stock metaphors (e.g. *white and blue collars, red tape, blue chip*, etc.). The special group of colour-based terms is presented by the abbreviations, which are typical in the field of information technologies and power engineering, such as *RAG (Red-Amber-Green), RGB (Red-Green-Blue), AW light (Amber-White Light)*.

While conducting the research the authors have elaborated the following classification of the colour-based metaphorical terms, which can be:

1. based on allusion (*ivory tower, blood rain, chocolate mousse, clear blue water*, etc.);
2. named after minerals (gemstones) and metals, and which in the majority of cases are allusive (*amber warning light (aviation), amber light (automobiles), amber display (IT), alabaster cement, alabaster glass, pearl filler, pearl test, opal diffuser, opal lamp*, etc.);
3. historically-bound (*blue chip, blue ribbon, black swan, red ink, black ink, silver certificate, pink sheets, pink slip, red tape, blue laws, blue print, red candlestick, black candlestick, red letter day*, etc.);
4. based on literary works, e.g. fairy tale personages, cultural heritage (*black knight, white knight, gold bug, purple crocodile*, etc.);
5. created by analogy (*black / grey swan, white / black / gray knight, blue / white / pink collar*, etc.);
6. based on comparison (*pearl white, egg shell white*);
7. based on the phenomena typical of the distant unrelated domains of knowledge (**synesthesia**, e.g. *red pain, slow black horror*, etc.);
8. named after plants (*orange forces, orange heat, orange dwarf, lemon heat, lemon spot, carrot equity, plum book, peach states, peachblow glass*, etc.);
9. named after the representatives of fauna (*dove-grey, mouse-grey, canary-yellow*, etc.);
10. named after liquids, food and spices (*cream-laid paper, honey wagon, salmon gum*, etc.);
11. containing elements of classical languages (***Flame tetra, Flavobacteria, Cerulean***, etc.);
12. named after the geographical location (*china clay, Verona marble, Venetian red, red chip (stock registered in PRC), Mars orange*, etc.);

13. named after a natural phenomenon (*sun belt, blue-sky stock*, etc.);

14. terms of foreign origin (*chernozem*, etc.).

Within the framework of the present article, we shall focus on some of the metaphorical term categories from the abovementioned classification.

#### TERMS BASED ON ALLUSION

The notion of allusion has been actively discussed by many prominent linguists (e.g. Grice 1975; Hebel 1991; Lennon 2004). Allusion is ‘... a passing reference, without explicit identification, to a literary or historical person, place, or event, or to another literary work or passage...’ (Abrams, Harpham 2009, 11).

The motivation for applying allusion is hidden in its ability to create a desired mental image for the readership of the text, establishing clear relations between the denotative (general) meaning of the lexical item and a concept in the scientific discipline it should denote. However, allusion ‘... allows the writer to coin expressions which can only be fully understood against the background of the target of the allusion...’ (Lennon 2004, 238). This is particularly important for the allusions applied for the needs of communication for special purposes. Technical vocabulary contains a variety of terms created on the basis of this pattern. Allusion as a term formation pattern is justified and successful if the readers recognise an implicature and, thus, can easily recognise the special meaning that is being expressed with the help of general knowledge. Allusion, as a marker of implicature ‘... functions within the intertextual or inter-contextual domain as an additional contribution to the semantic value of the alluding unit in the ... text, enabling the writer to mean more or other than he or she says...’ (Lennon 2004, 239).

The nature and relevance of the allusion are not explained by the author of the text, who relies on the readers’ awareness of what is expressed. This stylistic technique is an economical means of evoking certain associations and creating a particular mental image that the source and target audience are supposed to be familiar with. Therefore, to serve these needs, allusions may assume several forms, one of them being the form of metaphorical references (cf. Cuddon 1991, 29). The following examples of the terms coined on the basis of allusion (hidden / obvious similarity of one or many components) are considered to illustrate this phenomenon (Table 1).

**Terms Based on Allusion**

<i>Ivory tower</i>	A state of sheltered and unworldly intellectual isolation	<i>zilonkaula tornis</i>
<i>Chocolate mousse</i>	A viscous, stable water-in-oil emulsion, oil-slick	<i>naftas kārtiņa</i>
<i>Blood rain</i>	Coloured dust rain, dust fall	<i>Putekļu nokrišņi</i>
<i>Mother-of-pearl cloud</i>	A luminous iridescent cloud at a high altitude that may be seen when the sun is a few degrees below the horizon	<i>perlamutra mākonis</i>
<i>Clear blue water</i>	The ideological distance between political parties	—

*Table 1*

The term *blood rain* was mentioned by Homer in the *Iliad*—‘... but he shed blood rain down upon the ground...’ (the *Iliad* in the translation of Ian Johnston, 2007, 355) and then very frequently used by other ancient philosophers and writers (e.g. Plutarch, Livy, Pliny). This term was also employed by Geoffrey of Monmouth in the 12<sup>th</sup> century, who popularized the legends of King Arthur, as well as by William of Newburgh (the contemporary chronicler of Richard the Lionheart).

The term *ivory tower* was first mentioned in the Bible and it has been used allusively to denote virginity. Nowadays, its connotative meaning is connected with the notion of a place of unworldly isolation. This is considered to be an allusion to Henri-Louis Bergson’s *Laughter* (1911) translated by Fred Rothwell and Cloudesley Shovell Henry Brereton, who stated that ‘...each member [of society] must be ever attentive to his social surroundings—he must avoid shutting himself up in his own peculiar character as a philosopher in his ivory tower...’ (*ibid.*, 135).

The term *clear blue water* originates from sports (competitive rowing) and refers to an obvious gap between the leader and his followers. Nowadays it is used allusively to denote the discernable distance between the ideologies of two political parties. This term lacks the equivalent in the Latvian language and its meaning is always expressed in the form of explanation.

The term *chocolate mousse* denotes an emulsion, which is formed when two different liquids combine, with one ending up suspended in the other<sup>1</sup>. It has gained its name because of its appearance and visual similarity with the French traditional dessert with the same name.

The terms: *chocolate mousse*, *blood rain* have no direct equivalents in the Latvian

<sup>1</sup> <<http://www.itopf.com/marine-spills/fate/weathering-process/>> [accessed 03-12-2011].

language. Translators use the literal approach, choosing the appropriate stylistic devices and linguistic means, in order to express the exact meaning of the metaphorical terms.

Terms, which contain the names of the gemstones, are always based on the allusion to the particular mineral. The technical vocabulary contains a variety of terms, which have been created following this pattern, e.g.: *amber warning light* (transport)—‘*mirgojoša oranža (dzeltēna) bākuguns*’ (the meaning in Latvian is conveyed by explaining the concept the term denotes and the name of the mineral is omitted and replaced by the colours it may take), *amber light* (traffic)—‘*dzeltenā gaisma*’ (yellow light respectively), *pearl filler* (forestry)—‘*mākslīgais ģipsis*’ (the term in Latvian is the explained concept—artificial gypsum), *opal diffuser* (technology)—‘*gaismas izkliedētājs (difuzors)*’, *opal lamp* (technology)—‘*opāla krāsas lampa*’ (lamp of opal colour).

This stylistic pattern is quite frequently used in the English language (less in the Latvian language) to coin novel terms, and, if applied, it significantly contributes to the stylistic enrichment of the text. However, these terms rarely preserve their allusive (metaphorical) nature when translated into other languages, as the translators transfer the meanings of terms (concepts), not their forms. The term *mother-of-pearl cloud* might be considered a rare exclusion, as it preserves both the form and the metaphorical nature in both languages.

The usage of expressive means and cultural references in a technical text often determine the context-dependent character of some terms. Relations between meaning and context are of particular importance as they represent an interactive process that enables cognition and productive communication.

## TERMS CREATED BY ANALOGY

The application of analogy as a pattern for new words creation has a long tradition. According to Edward Sapir new words ‘... are being constantly created... on the analogy of old ones...’ (1921, 37). Otto Jespersen also analyses words and sentences, which are ‘... made after the same pattern...’ (1924, 19). A variety of terms are created by analogy with other existing terms. Analogy as a pattern for new term formation is applied for the sake of clarity and because it facilitates the introduction, understanding and application of the novel terms in both monolingual and multilingual communicative settings.

Colour-based technical terms are frequently created by analogy and are applied to designate the same phenomenon, which, however, might be of different impact, degree, scale and / or role in the same communicative setting. For example, the term *grey swan* has been created to denote the same phenomenon as the term *black swan* denotes (a phenomenon that occurs even though it had been thought to be *impossible*<sup>2</sup>),

<sup>2</sup> <[www.investopedia.com](http://www.investopedia.com)> [accessed 03-12-2011].

but of a different degree, i.e. *grey swan* designates an event that can be anticipated to a certain extent, but is considered *unlikely* to occur<sup>3</sup>. In the abovementioned example the concept (i.e. an unexpected phenomenon) remains the same, but the level or the degree of unexpectedness has been mitigated and reduced from *impossible* to *unlikely*. This transition has been indicated and represented by replacing the strict and powerful *black* with a softer and less confident *grey*.

It is also possible to create terms by analogy based on the visual similarity with and / or among the real physical objects the terms are designed to denote. In astronomy for the classification of stars (size, mass, etc.) various colour epithets are used to differentiate among types of *dwarfs*, e.g. *red dwarf*—‘*sarkanais punduris*’, *black dwarf*—‘*melnais punduris*’, *white dwarf*—‘*baltais punduris*’, *orange dwarf*—‘*oranžais punduris*’, *brown dwarf*—‘*brūnais punduris*’, *yellow dwarf*—‘*dzeltenais punduris*’.

The same pattern is applied in the field of Information Technologies to refer to the standard references on PostScript, i.e. *red, blue, green and white book*—‘*sarkanā zilā, zaļā, baltā grāmata*’.

If the terms have been created by analogy with the initial term, it, to some extent, justifies the application of the word-for-word translation approach, e.g. *red, green, black, blue tide*—‘*sarkanie, zaļie, melnie, zilie uzplūdi*’. It facilitates the application of the terms, makes it unambiguous and understandable for experts from various language communities and even promotes the standardization and unification of the terminology in the respective field.

## COLOUR TERMS OF GREEK AND LATIN ORIGIN

The significance of Classical languages as the primary source for vocabulary extension and terminology coinage has long been recognised by many scholars (Crystal 1995; Cabre 1999; Veisbergs 2001). In English, and in many other European languages, ‘... the knowledge of Latin and Greek, for example, has in the past been highly influential in the development of special subject designations and remains important today...’ (Sager 1997, 26).

For example, in the environment-related fields a variety of terms are coined using the colour names in Greek and Latin. A large number of the names of the elements of flora and fauna, as well as chemical substances and minerals are coined following this pattern (Table 2).

<sup>3</sup> <[www.investopedia.com](http://www.investopedia.com)> [accessed 03-12-2011].

### Colour Terms of Greek and Latin Origin

Greek	Latin	Meaning in English	Examples in English	Translation into Latvian
<i>coccino-</i> , <i>erythto-</i> , <i>rhodo-</i> , <i>eo-</i>	<i>purpureo-</i> , <i>rubri-</i> , <i>rufi-</i> , <i>rutuli-</i> , <i>rossi-</i> , <i>roseo-</i> , <i>flammeo-</i>	Reds of various shades (including pink)	<b>Rhododendron</b> <b>Flame</b> tetra	<b>Rododendr</b> s <b>Sarkanā</b> tetra <b>Uguns</b> tetra
<i>chryso-</i> , <i>cirrho-</i>	<i>aureo-</i> , <i>flavo-</i> , <i>fulvi-</i>	Orange, also gold	<b>Chrysolophus</b> <b>Flavobacteria</b>	<b>Zeltā</b> fazāns <b>Flavobakterijas</b>
<i>xantho-</i> , <i>ochreo-</i>	<i>fusci-</i> , <i>luteo-</i>	yellow	<b>Xanthopuccine</b> <b>Luteolin</b>	— <b>Luteīns</b>
<i>chloro-</i>	<i>prasini-</i> , <i>viridi-</i>	green	<b>Chlorophyll</b> <b>Viridity</b>	<b>Hlorofils</b> <b>Zaļums</b>
<i>cyano-</i> , <i>iodo-</i>	<i>ceruleo-</i> , <i>violaceo-</i>	blue	<b>Cyanobacteria</b> <b>Cerulean</b>	<b>Zili zaļas</b> aļģes <b>Debeszils</b>
<i>porphyro-</i>	<i>puniceo-</i> , <i>purpureo-</i>	Purple, violet	<b>Porphyrite</b> <b>Purpurin</b>	<b>Porfirīts</b> <b>Purpurīns</b>
<i>albus-</i>	<i>albo-</i> , <i>argenti-</i>	white	<b>Albino</b>	<b>Albīns</b>
<i>melano-</i>	<i>nigri-</i>	black	<b>Melanin</b> <b>Nigritude</b>	<b>Melanīns</b> <b>Melnums</b>

Table 2

The majority of words that became internationalisms were borrowed into national languages from Latin and Greek either directly or through Italian, French and English. It should be added that nowadays newly created terms derived using Latin and Greek elements come mainly through English. Thus it may be stated that English as such is not the major *source* language but rather the main *relay* language for internationalisms, which do not depend on the context and are easy to translate.

### CONCLUSIONS

Language for science and technology is a constantly growing flexible area with an immediate response to a developing situation, i.e. the language of primary term formation. One of the most frequent patterns of term creation is based on knowledge, perception and cognition of colours, due to their universal character.

The empirical study of the colour-based terms conducted in the paper demonstrates that, at present, users of technical terms should rely upon corresponding background knowledge which includes not only *linguistic competence* and the *knowledge of a*



*special subject field*, but also *awareness of cultural and social contexts*, or, in other words, understanding of the pragmatic aspects of the contemporary technical text.

Modern terms, which generally do not meet the requirements set for ideal terms, potentially pose translation problems. These problems may be caused by various reasons, such as lack of referential equivalence, intradisciplinary polysemy, culture specific allusions embodied in the meaning of a term, and the impossibility to transfer the metaphoric component of meaning of the term into the target language. One of the main apparent tendencies in the contemporary usage of terms is that their meaning is not only determined by the field, but is also dependent on the context.

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ETB, *EuroTermBank*, © EuroTermBank Consortium. 2006–2007.

IT&T, LZA Terminoloģijas komisijas informācijas tehnoloģijas un telekomunikācijas apakškomisija.

*Latviešu-angļu vārdnīca*, © A. Veisbergs. 1999–2007.

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## SPALVOS SEMĀ TURINČIŲ METAFORINIŲ TERMINŲ KLASIFIKACIJA

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### SANTRAUKA

Pastaraisiais metais techninių tekstų pobūdis labai pasikeitė. Tradicinių techninio teksto kūrimo principų taip griežtai nebesilaikoma, o stilių ir žanrų ribos vis dažniau susilieja. Techninis tekstas tapo ne toks formalus – dabar jis išraiškingesnis ir stilistiniu požiūriu mišrus. Kartu su tekstu pakito ir technikos kalba – techninis žodynas buvo papildytas naujais terminais, atsirandančiais vykstant nuolatiniams esamų ir naujai kuriamų terminų metaforizacijos bei reikšmės išsiplėtimo procesams.

Sudėtingi reikšmės kūrimosi, išsiplėtimo ir kompresijos procesai šiuolaikiniuose techniniuose tekstuose straipsnyje aptariami remiantis spalvos semą turinčių techninių terminų anglų kalba ir jų galimo vertimo į latvių kalbą analize.

Empirinis spalvų semą turinčių terminų tyrimas parodė, kad šiuo metu techninių terminų vartotojai turėtų remtis ne tik *lingvistine kompetencija* ir atitinkamos *specialiosios srities žiniomis*, bet ir *suprasti kultūrinį ir socialinį kontekstą*, arba kitaip tariant, šiuolaikinio techninio teksto pragmatinius aspektus. Spalvos semą turintys terminai vertėjams gali sudaryti problemų dėl įvairių priežasčių, pavyzdžiui, dėl interdisciplininio daugiareikšmiškumo, termino reikšmėje esančių kultūrinių aliuzijų ar sunkumų, kylančių perteikiant metaforinį termino reikšmės komponentą vertimo kalba.