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SEMIOTICS OF COLOUR

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Abstract

This study contains a brief overview and comments on some basic texts on the semiotics and semantics of colour. It presents my view on the basic semiotic status of colour as a communication system and on the grammar features of colour language.

1. Achievements and lacuna

Umberto Eco (1985) defines colour as a *cultural unit*, which means that as a sign it combines both the individual and the social. The problem is that he stops there. Miroslav Dachev (1997) used the cultural unit of Eco in introducing his reflections on colour in Bulgarian symbolist poetry of the late 19th and early 20th century in a monograph. Dachev introduces the concept of *coloureme* (before Kress & van Leeuwen 2002: 352, and Leone's 2007: 164 *cromemi* but with a partially different content). Dachev's *coloureme* serves to summarize the meanings of colour for ideas and feelings, as well as the means by which they are derived – from different

versions of the semiotic triangle through the role of context to determine the meaning of the Basic Colour Terms, by the cultural traditions and innovations of the national and international character, to the linguistic features during this period.

Kress & van Leeuwen (2002) deal with the visual colour by analyzing the colour speech and visual rhetoric, but not colour language. They achieve results within the adopted methodology of systemic linguistics. According to the authors the colour is metafunctional in terms of Halliday (1978; 1993) with *ideational, interpersonal, textual* functions. In some cases colour fulfils these three metafunctions simultaneously, but (346) colour does not always fulfil all three of these functions. (350)

Kress & van Leeuwen recognize that there are two ways to produce meaning of colours. The first is psychological – by associations that come from the culture and the past, but also from present current advertising and brands. An important element is the context in which an association operates. The second way is to accept the visual qualities of colour – *hue, saturation, purity, modulation, differentiation* – as semantic distinguishing features. They are placed within the ideational, interpersonal and textual functions. Visual quality ‘is not systematized, as in phonology (in terms of Halle & Jakobson), as structural oppositions but as values on a range of scales. One such scale is the scale that runs from light to dark, another the scale that runs from saturated to desaturated. We see these features not as merely distinctive, as merely serving to distinguish different colours from each other, but also as meaning potentials. Any specific instance of a colour can be analyzed as a combination of specific values on each of these scales – and hence also as a complex and composite meaning potential, as we now demonstrate’. (2002: 355)

This is a very accurate observation, but we are faced with colour idiolects, dialects, with national and regional languages of colour. Thus, we enter by the physical properties of colour, once – in the territory of natural language, and secondly – into the social and individual culture and tastes. This means that we can hardly find any specific colour grammar to the whole *socium*.

The position of van Leeuwen is that ‘looking at the colour as semiotic resource means, first of all, focusing on its materialities and technologies.’ (2011:1). This means, in my terms, to focus on the ‘speech apparatus’ of mankind with respect to producing colour-signs. But van Leeuwen declares that ‘looking at colour as a semiotic resource not only means looking at colour technologies, it also means looking at the way colour *meanings* are developed.’ (2011: 2).

Van Leeuwen is concerned about the possibility that colours may indicate ideas and feelings, which I consider essential in the semiotics of colour.

An important semiotic case study is the motivation of the colour sign. Van Leeuwen stated this case, although not in comparison with natural language where the linguistic sign is arbitrary, except for a small number of onomatopoeic words. Along with this are given many important features of the motivation and the ability to completely subjective interpretations of colour idiolect, colour dialect positions (2011: 2). In the examples of van Leeuwen, and from my corpus, there are facts that I treat as important features in the colour language (Almalech 2001; 2011):

- One and the same colour can have opposite meanings. I call this intra-colour antonymy.
- Many colours can mean the same feeling or idea. This is the inter-colour synonymy.
- Both effects are due to the small number of tokens in the colour language – visual and verbal.

In van Leeuwen's book (2011), albeit briefly, are included the paradigm for basic colour terms, the colour theory for designers, the colour wheel and the colour models (RGB, CMY, RYB), the contrasts in Bauhaus art school. There still prevails an occupation with visual colour. It is kind of strange that in his book and in an article with Kress as co-author van Leeuwen never used the theory of prototypes (Rosch 1972a; b; 1975; 1977; 1978).

An important conclusion:

There has never been a single language of colour. Colour codes with a restricted semantic reach have always proliferated, and sometimes contradicted each other. But there are also broader, longer lasting, and more widely distributed trends, such as the reign of 'puritan black' or the ascendance of blue (van Leeuwen 2011: 97)

The works of Ugo Volli and Massimo Leone are of special interest. Volli (2004) deals with the colours in fashion, which shows that semiotic change is the basic rule. Leone (2007) tries to review different semiotic instruments for the analysis of colour. He proposes the idea that the qualities of the visual colour – hue, saturation, purity – are an array of distinguishing features. This opinion is similar to that of Kress & Van Leeuwen's (2002) but with certain differences, as far as he does not use systemic linguistics. For understanding the language of colours it is necessary to analyze the semantic function of these three elements and the combinations of all of them in the common sense of what it means simply by "tint", "shade" or even by the synecdoche "colour" (164). Leone leaves 'retorica strutturale' of Groupeµ and Greimas' school to be discussed elsewhere.

It seems inevitable that the physical properties of the visual colour hue, saturation, purity etc. should be understood as distinguishing features in terms of phonology – in the structural version of Leone's semiotics, and in the systemic linguistics methodology of Kress & van Leeuwen. Due to lack of space and time I will comment on this case elsewhere.

Semioticians are dealing with the translation of colours. Kourdis (in print) speaks of intersemiotic translation between language and colour in advertisements. Leone (2009) presents a semiotic interpretation of the art of Marc Chagall on *Moses while receiving from God the Tablets of the Law*. He indicates how the visual colour matches the biblical text.

Caivano (1996; 2010) is an architect and active participant in the international semiotic events. He is engaged in the rhetoric of colours. Caivano is intent on making 'semioticians interested in visual semiotics better acquainted with the very elaborate aspects of colour theory, from which they could take models to develop other aspects of visual semiotics, and to make colour theorists more familiar with general semiotics' (1998).

Over the past fifty years, the main objects of the research were Basic Colour Terms. For me, this impoverished the semiotics of colour. However, the development of these studies is important. Here are its most important points:

- The book of Berlin & Kay (1969) triggered the discussions. Basic colour terms are given technical definitions.
- The evolutionary sequence of basic colour terms is presented as an universal phenomenon: I Dark and light; II Red; III Green or yellow; IV yellow and green; V Blue; VI Brown; VII Purple, pink, orange, or gray.
- It is proposed that the categories of colour are presented by the basic colour terms.
- The Prototype theory proposes the idea that there are prototypes, a focus or “the most typical examples” of colours. (Rosch 1972a; 1972b; 1975; 1977; 1978)
- Colour concepts are *embodied* in that focal colours are partly determined by human biology. Colour categorization makes use of human biology, but colour categories are more than merely a consequence of the nature of the world plus human biology. Colour categories result from the world plus human biology plus a cognitive mechanism that has some of the characteristics of fuzzy set theory plus a culture-specific choice. (Lakoff 1987: 29)
- A macro-category of colour is presented by basic colour terms. (Witkowski & Brown 1977; 1978). Macro-colour is a “composite category” – a category may be represented by different basic colour terms, and vice versa – a basic colour term may represent two different macro-categories (Witkowski & Brown 1977: 50).
- These categories are related to the primary colours in human biology, as in the Opponent colour theory (Karl Hering 1834-1918).
- The macro-categories are macro-light, macro-dark, macro-red, macro-green-blue (GRUE), macro-green-yellow. (Witkowski & Brown 1977; Kay & Maffi 1999).
- Each macro-colour has different prototypes that are both intra-social and cross-social.
- Wierzbicka (1990) presents a scheme, which combines the evolutionary sequence, the prototype theory, the macro-categories and the fuzzy sets. Her understanding is that prototypes are natural objects, rather than Rosch’s salient colour areas. Wierzbicka points to specific objects: red – blood and fire; white – light; black – darkness, night; blue – sea and sky; green – all plants; yellow – the sun at noon.
- Wierzbicka (2008) does not accept the universality of the evolutionary sequence of the basic colour terms. She points to the fact that many languages have no words equivalent to the English word “colour” [hue], and therefore there can be no such thing as “colour” [hue] universals. Wierzbicka does not accept colour categories, which as biological phenomena are presented by basic colour terms. (1990: 102-103).

– Saunders (1992, 1993, 1995) & van Brakel, (1997, 1988, eds. 2002) are the most serious and persistent critics of the idea of universals in the evolutionary sequence of Berlin & Kay's paradigm.

– Using Munsell chips leads to anglocentrism, expressed in the fact that the English system of colour terms is superimposed on languages that have two or three English-type colour terms. Munsell's array and the chips based on it, as used in the interviews, discredit the quality of the linguistic data because colour impressions consist of more than hue, saturation and brightness. These chips display only hue, saturation and brightness whereas scholars need a greater number of features of colour, e.g. softness, size, glossiness, because they may influence the production of colour terms. (Biggam 2012: 87)

– Wierzbicka solves the problem of anglocentrism by using the semantic primitives (atoms, molecules) and the prototypes (2008).

– The Vantage theory of MacLaury (2002) has an anti-anglocentric element. It is 'a theory of cognitive categorization in terms of point of view or 'vantage.' [...] MacLaury found the prototype theory and fuzzy-set logic inadequate. [...] A vantage is a point of view constructed by analogy to physical experience as though it were one or more 'space-motion coordinates' on a spatial terrain.' (Allan 2006: 252–253).

– Borg surveys the colour categorization and colour terminology among the *Negev Bedouin* (1999) and the colour usage in the modern Arabic colloquials (2007). He uses the macro-colour categories to demonstrate the richness of colour expressions that stand outside the set of basic colour terms.

– Saunders (2009) puts to use the *habit* – one of the three key concepts of Charles Peirce. 'Colour' for Peirce is *not* deterministic, but fluid and variant, in the flux of perpetual change. [...] he proposes *the structuring of 'habit,'* since the character of the sensory core is determined by the generative functioning of habit. [...] Peirce's arguments thereby assert colour, colour naming and categorisation to be *socially generated historical prostheses* – the production of an *exosomatic organ*. Thus colour has no 'immediacy' or predetermined givenness, as colour science asserts, but evolves as part of a historic, dynamic, complex 'sign-system.' (2009: 370).

– Biggam (2004, 2012) is an excellent expert on the discussion of the semantics of basic colour terms. She is interested in diachrony.

– Sutrop (2001) operates in the pattern of Lotman's modelling framework – 'one can analyze the BCTs (i.e., basic colour terms) using the formula "language = code + history" and abandon the technical definition of a BCT. We can paraphrase Lotman's formula in the following way: "colour language = BCTs and non-BCTs + history of language and culture". (46–47).

– Sutrop is right that 'focusing research only on the BCTs minimizes the linguistic, semantic and semiotic richness of a colour language.' (47). It is because 'BCTs form the absolute minority (maximally 0.5 to 5 percent) of the colour terms in a language.' (47). Sutrop insists on language axes to organize and model the linguistic colour space – 'static vs. dynamic,

syntagmatic vs. paradigmatic, synchronic vs. diachronic, semasiologic vs. onomasiologic, and logical vs. mythological.’ (46–47).

2. Proposals and realizations

Not a little has been done so far in the field of semiotics of colour, but I have not met anyone explicitly indicating the basic semiotic parameters of colour. In my opinion, this is necessary, because it would bring a little more clarity to the complex and controversial problem of the symbolism of colour.

2.1. Visual and verbal colour

The big problem is that colour is both a visual and a verbal sign. All researches, in one degree or another, have mixed colour words with visual perception and sensation.

2.2. Signifier and signified

It is worth distinguishing these two areas from a basic standpoint. In terms of Saussure they should look like this:

Verbal colour – basic colour terms

signifier	sound wave (articulate sounds)
signified	1. idea 2. concept/notion 3. the real object

Number of signifiers – 11-12 basic colour terms + about 50 non basic colour terms – words for prototypes (light, darkness, fire, blood, sea, sky, plants, the noonday sun), and rivals of prototypes (cherry, strawberry, lemon, cocoa, ruby, sapphire, yolk, egg, rose + NP – Paris blue, etc.)

Visual colour in the passage rites of wedding and funeral

signifier	Light/colours – electromagnetic wave + elementary particle photon
signified	1. Apotropeic (preserving and reproduction) for Red; spirit and physical purity, immaculate for White; life, fertility, eternity, health for Green (Almalech 1996) 2. The actual objects, coloured according to the ritual norm

Number of signifiers – thousand shades of basic colours, among which are preferred the most typical (focal) and few versions of mixing colours (RGB, CMY, RYB).

2.3. The number of characters-tokens in natural and in colour languages

Together with the lack of speech apparatus for colours in humans, there is another difficulty for the study of colours as a sign system. The total number of natural language has up to 200,000 characters-tokens (words), while the language of colours has a much smaller number of tokens – in verbal colour 80-100, in the visual – significant for communication up to 30 shades of primary colours. This implies a greater ambiguity of colour signs.

2.4. Communication with verbal and visual colour

This area outlines another problem – how to communicate with verbal and visual colour. Humans have each a biological antenna (acoustic apparatus) to broadcast verbal tokens, and a biological antenna (auditory perception) for receiving audio signals. For the visual signs each human has a biological antenna only for receiving visual signs (perception and sensation) but no biological antenna to broadcast (speech apparatus) any visual colour characters. A human's "speech apparatus" is a technology for colouring, painting objects.

2.5. Visual colour

Mixing the visual and the verbal is inevitable in the hypotheses, theories and studies of colour.

2.5.1. The symbolism of colour in anthropology

The studies of colour in the culture of the South African tribe Ndembu (Turner 1966), the Muslims of the Jordan Valley (Granquist 1965) of the Bedouins of the desert Negev (Borg 1999) present relevant information about the symbolism of visual and verbal language of colour. The data they provide should be used in the semiotic approach.

2.5.2. Reduplication as a semiotic machine for natural/motivated signs.

As noted by Robert Yelle (2012), reduplication is not only a proven mechanism for the production of onomatopoeia in natural language. It is also an important element in religious ritual space. Yelle raises the issue of motivation of the signs in the religious understanding in different folklore and religious systems and practices. The natural sign has special importance in the Indian mantras, being regarded as a healer and connector of the human world with the Hereafter or the ideal world in a direct way. Thus, in the unscientific, religious understanding of sound and colours in the world traditions the sounds of natural language and the colours are motivated/natural signs. This is an anti-structuralist understanding, but it is a fact in all the world folklore and religious practices. If anthropological researches make it clear that the colours have meanings for non-colours (i.e. symbolism of colours), this should be part of the semiotics of visual colours. In the light of sacred ritual function of the text of the Bible, the Hebrew language and its translations have the status of a recurring ritual.

2.5.3. Colours at rites of passage – universality and relativity

The presence of a red veil, red and white clothes, bouquet (green) and gold in all traditional weddings through the ages – regardless of religion, the type of social order and technological level – is a universal four-syntagmatic encoding of the traditional wedding. (Almalech 1996)

2.5.3.1. Synchrony and diachrony at the wedding

The change of the age-old, universal code in the late 19th and early 20th century is revolutionary. It can be explained only with the arrival of many people from rural areas to cities. The city lifestyle prevents the direct relationship with nature thus opening the way to a new mentality – independence from nature. This leads to a gradual forgetting of the meanings of ancient colours and replacing them with another combination – white (dress, veil, shoes), green (bouquet) and gold (wedding rings). Apotropaic red disappears, and red is the colour of protection power for the bride – “from which all life fled.” Now, it is the city environment that protects and provides a reproduction of the family (Almalech 1996).

2.6. Grammar of visual colours

2.6.1. In rites of passage

Visual and verbal colours must be clearly distinguished in a grammar of the language of colours. Typical rites of passage are the folklore wedding and burial. Rituals are an example of the visual language of colours. In these rituals the main personages (bride, groom, deceased, mourners) undergo a transition from one state to another. They need help and protection, because the transition is dangerous. This presupposes a strategy and structure of the whole ritual, including colours. Strategy and structure are bound by the ultimate goal, which affects not only the participants but serves society by guaranteeing the preservation of the family and the continuation of the Clan. This drastically differentiates the ritual use of colours from its daily use, the fashion, and the architectural use of colours.

In this context, the approach is to find the basic grammar categories we know in the grammar of natural language. For example, the language of visual colours has no parts of speech. The category of Time can be traced only with a view to motivating meanings of colours in traditional rituals in terms of the magical effect of the colours at the time of the ritual, and afterwards, in the future. We can think of the narrative, declarative and narrative-declarative meaning of the ritual colours. For example, the white of the modern bride is narrative, if she is a virgin (physical and spiritual purity). If a modern bride is not a virgin, but wears the white dress of the modern bride, apparently meaning virginity, purity is declarative, i.e. false. Physical and spiritual purity has been a universal signified of white for centuries across many cultures. With the same lexical meaning, *purity*, white is used at funerals – in Ancient Greece, in modern Japan, etc.

It follows that there is a lexical meaning that fits in with the contextual, depending on the structure and strategy of the ritual. For example, white is a sign of mourning in ancient Greece with well-motivated reasons (Goodenough 1964: 165–167; Abrachams 1964: 101; Ferguson 1989: 128), but its meaning is declarative of ‘spiritual, mental and physical purity’, which mourners and the deceased ‘present in the most appropriate way before the gods’ (Goodenough 1964: 166).

Clothes of priests are subordinate to the doctrine as well as the ideas of the calendar holidays in a particular religion.

2.6.2. In the visual arts, design and daily use

Obviously, in this field it is impossible to seek universal and permanent meanings of the colours. What is possible is to stay within the scope of Colour science – theories of contrasts, the colour wheel, models for additive and subtractive mixing of colours – RGB, CMY, RYB.

2.7. Verbal colour

There is no doubt, that research on the semantics of the basic colour terms] is essential for the semiotics of colour. Regarding the imposition trend, not only basic but non-basic colour terms should be considered. Both types of terms are examined systematically in all of my books on colour in the Bible (Almalech, 2010, 2013, 2014). And what is more, non-basic colour terms have been analyzed in a number of publications (Almalech, 2011b, 2012a, 2012b, 2012c, 2013, 2014 etc.).

2.8. My hypothesis and conclusions

There is a very small number of universal meanings of the colours associated with the prototypes of colours. The method of proof is by an associative experiment. The methodology is presented in Almalech 2001. The verbal meanings were compared to the meanings from rites of passage, i.e. by a comparison between verbal and visual colour meanings.

Here are its most important points:

a) A Compilation of Norm for verbal associations of Bulgarians to basic colour terms. The norm is derived from two experiments – Norm for verbal associations (Gerganov 1984) and an experiment in 1995-1996 (Almalech 2001).

The comparison shows that there are sustainable associations of the basic colour terms. Sustainable associations are found in both experiments. These are the words of prototypes, basic properties of the prototypes (hot, warm for fire and blood; expanse, space, limitlessness for sky, sea etc.), as well as semantisation of the basic properties (love, hate for red; freedom for blue, life, eternity for green etc.). Thus, per word-stimulus *red* sustainably occur fire, flame, blood, heat, hot, and all extreme feelings – love, hate, etc.; per *green* – grass, tree, shrub, lettuce, lawn, leaf, freshness, life, eternity, vitality, poison, malice, etc. (Almalech, 2001, 2011) These are of the highest statistical frequency. This sustainable set of associations is the Core norm. There is a Periphery norm, in which the associations are different. They reflect the personal and social meanings of the colours that represent the capacity of the colours be varied in its symbolism.

The results of the associative experiments are relevant of language consciousness and subconscious. Svitlana Martinek postulated a stronger significance of this method: ‘The associative network is not arbitrary but to some degree is predetermined by hierarchical conceptual structures in the consciousness of speakers. The responses evoked by a certain stimulus can be seen as the reflection of corresponding conceptual structures.’ (Martinek 2004: 497)

b) The Norm shows some universal features of verbal colour language:

· intra-colour antonymy – colours must have each antonymous meanings.

- inter-colour antonymy – the same meaning can be symbolized by different colours.
- inter-colour synonymy – all colours can indicate the same idea, emotion.
- These features change our understanding of synonymy, antonymy and contrasts between colours.

It is obvious that for all cultures, that do not use written systems, this method is not applicable. Especially for those languages in which there is not even a word corresponding to abstractions ‘colours’, ‘green’, ‘blue’, etc.

c) The next step was to trace the context dependent meanings of basic colour terms, prototype terms, and rival prototype terms in the novels of Emilian Stanev. This is to verify whether context (implicitly or explicitly) realizes the meanings of the core norm. The verification showed that this writer was able to create contexts in which occur the meanings (words-associations) from the associative norm – contact or distant to/from the color term.

d) The next step was to compare the verbal language of colours (from the norm and context-dependent manifestations in the novels) with visual colours (their symbolic meanings) of rites of passage – wedding and funeral. The comparison shows that there is a very small number of mutual meanings, e.g. these meanings overcome the mediation function of natural language, so that the colours are functioning with sustainable ritual visual meanings in the linguistic subconscious of the speakers of Bulgarian.

Here is an example – on green. The meanings are derived from analyzes discussed in Almalech 1996, 2001; Dachev 1997.

Visual colours (traditional marriage and burial and secret Religious-Mystic Knowledge)	Colour	Verbal colours
fertility - Balkan folklore	green	nature, fertility, vegetation
freshness of nature - Balkan folklore, Islam	green	fresh, freshness
fertility - Balkan folklore, Islam	green	nature, growth
freshness, growth - marriage meaning that is signed over the bride and groom - Bulgaria, Romania, Greece, freshness of nature	green	fresh, nature, freshness, vegetation, growth
vegetation on the Earth - Jewish Kabbalah	green	planet, vegetation

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