Emotion and colour: Physiology, lexicalisation and conceptualisation

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Abstract

In English and in many other European languages, Croatian included, it is quite common to use colour terms as an indicator of different emotions. When we talk about colour and humans, we areactually referring to the colour of their skin, more precisely their face.

The main goal of this study is to investigate the correlation between the primary colour terms in collocational units and their corresponding emotions in English and Croatian. Since most of the current research on emotion concepts has focused on English, we would like to provide further evidence from Croatian expressions of emotions. A cross-linguistic corpus-based analysis of the two language corpora (the British National Corpus and the Croatian National Corpus) in the first part of the paper should offer a better insight into the salience of basic emotion categories in reference to basic colour categories. The second part of the paper investigates the motivation behind some of the linguistic expressions within the framework of cognitive linguistics. Despite the obvious cross-linguistic differences as to the system of preference by which each language links colours and emotions, some systematic patterns, due to their motivational force, are likely to appear in both languages under study.

Key words: emotion, colour, collocational units, conceptual metaphor, metonymy

Introduction

The present paper investigates*the reasons why colour terms and emotions are frequently associated in the different languages of the world.*Within the confines of this study, it will be possible to show what corpus data of two unrelated languages, English and Croatian, reveal about the correlation between the colour terms in collocational units and their corresponding emotions. Since most of the current

research on either emotion or colour concepts has focused on English, the present study will provide further evidence from Croatian expressions of emotions.

The cross-linguistic overlap between the colour terms and emotion terms and the salient nature of their basic categories is investigated within the framework of cognitive linguistics. In line with the bulk of recent cognitive developments(Lakoff, 1987; Kövecses, 1990, 1991), the findings suggest two relevant sources of conceptual motivation – conceptual metaphor and metonymy. Despite the obvious cross-linguistic differences as to the system of preference by which each language links colours and emotions, some systematic patterns, due to their motivational force, are likely to appear in both languages under study. Furthermore, it will be suggested that universality would be assigned to the bodily bases of language and cognition, whereas cultural variation to the interaction between body and culture (Gibbs, 1999, 2003).

Although this paper is not a direct contrastive study with English, we believe it is a small but important contribution regardingthe similarities and differences between the two languages.

The main questions to be answered in this study are (i) to what extent do the corpus data support the claim of preferable colour-emotion co-occurrence and (ii) what do contextualised linguistic instantiations reveal about the sources of conceptual motivation and their productivity in regard to the integration of universality and culture?

Basic-Level Emotion and Colour Concepts

Emotions and colours are a natural part of human experience. Even though we constantly experience and talk about them, the interrelations between the experience, concepts and lexicalisation is far from obvious.Over the past few decades, there has been a growing interdisciplinary interest in the universalities and specificities of emotions and emotion concepts. Several theorists (Kövecses,1986; Shaver et al., 1987) have discussed, and in some cases began to explore empirically, the concept of emotion with respect to the notions of basic-level categories and prototype theory (Rosch, 1973). Despite the cross-linguistic differences in the range and scope of specific emotion terms, the very principles of conceptualising emotions have been claimed to be universal (Wierzbicka, 1999). Hupka et al, 1997 made an attempt to demonstrate the universal development of emotion categories in 64 natural languages.

Similarly, Berlin and Kay's contrastive study into colour semantics proposesthe evolutionary universality of basic colour terms by claiming that "a total universal

inventory of exactly eleven basic colour categories exists from which the eleven of fewer basic colour terms of any given language are always drawn" (Berlin and Kay, 1969: 2). Whereas a great deal of theoretical progress was made by adopting the notion of basic in colour semantics, no such progress was achieved in the case of emotions. However, for the purpose of this study, we have adopted Shaver et al. (1987) five basic-level emotion terms: *fear, sadness, anger, joy* and *love*.

Facial Colour and Mood

When we talk about colour and humans, we actually refer to the colour of their skin. Since we would be primarily concerned with the fuzzy territory between literal and figurative use of colour, we only take into account those occasions in which the colour term refers to skin, more precisely the face. As we already know, skin colour is susceptible to change under the influence of several factors: sun exposure, emotions and sickness.

The flexible nature and fuzziness of emotion categories point to the existence of many emotion words that denote emotional blends that are related to more than one prototype. Polysemous nature of colour terms, on the other hand, makes them equally productive, with meaning variants not primarily related to colour properties. The following section aims to attest the possible systematicity of the emotion-facial colour co-occurrence and offer some explanations regarding their salience.

Colour Terms and Emotions in the BNC and the CNC

In this study, we have taken into account 136 highest ranked emotion words in Shaver et al. (1987). However, the fact that all the emotion words are nouns might somewhat affect the final results. The emotion words were searched for in the British National Corpus (BNC) and the Croatian National Corpus (CNC) in combination with eleven basic colour terms(which exist in both languages) and two additional elaborate colour terms. TheCroatian National Corpus, although limited in size (30 million words) and considered a work in progress, is the only avalilable source of text for the present analysis. Aware of its limitations and different structure, we made an effort to retrieve and use the data to the best of our abilities.The amount of context taken into account for the search was a span of 5:5, which means that to be registered, the colour word had to appear within five words on either side of the emotional words. On the completion of the search, all the data were examined manually since a large number of the retrieved examples with colour terms had no relation to the emotion term. Additionally, numerous examples, such as *black thoughts / crne misli* were excluded from the search becausethere is no explicit connection between the colour term and the emotion term.

Corpora analysis

Results of the English and Croatian data analysis are presented in the Table 1 and are discussed in greater detail below. The table is divided into three parts that represent three different foci in the colour domain. Individual colours are therefore mentioned twice, but only for expository reasons. The number of occurrences is distributed along the five major clustersLOVE, JOY, ANGER, SADNESS and FEAR.The subcategory names suggested by Shaver et al. (1987: 1067) are slightly altered by the author of this paper.

The total number of emotion terms co-occurring with a mention of skin colour was relatively high, namely 25. However, the number of colour terms referring to the skin colour connected to the emotion was surprisingly low. Only 10 colours were recorded in this context (*white, pink, red, scarlet, crimson, purple, black, yellow, green* and *grey*).

Some colours, such as *brown*, *orange* and surprisingly *blue* were completely missing from the search in both language corpora. Whereas the association of *blue* with the melancholic character survives in Englisheveryday expressions *to feel blue, to have the blues*, there are no such attested corpus findings.

Similarly, *black* is traditionally associated with sadness and sorrow in both cultures, but the concept itself does not seem to be transferred into any linguistic expression. While the association of *blue* and melancholy might be initially motivated by facial colour (Niemeier, 1998), *black* seems to be less accurate indicator of the exact skin colour, but rather metaphoric in nature.

Much larger in size, the BNC offered a consequently greater number and variety of the retrieved data (121). Versatility is shown in the range of both colour terms and emotion terms. In both languages the most attested, although not exclusive, language structureis 'colour term *with* emotion term', as in *red with anger / crven od ljutnje;white with fear / blijed od straha; green with envy / zelen od muke*.

Table 1 clearly illustrates some colour preferences regarding the positive and the negative emotional concepts. Emotional domains of LOVE and JOY are only vaguely associated with facial expressions. The colour terms with such a reference are *pink, red, scarlet* and occasionally *white*. The colour *pink*, standing in the midway between *red* and *white*, can temper the fiery passion of *red* and intensify the clarity of *white*. However, it is only attested in the BNC, in the fixed expressions such as *in the pink, pink with pleasure, pink with excitement*.

The negative emotional concepts of ANGER and SADNESS illustrate a rather similar distribution of colour terms in both languages under study. Without a doubt, the category red functions as the most dominant centre of gravity, especially co-occurring with the subcategoriesRAGE, SHAME and EMBARRASSMENT). *Red* has a very long and powerful historical background, from by far the largest number of meaning extensions over the years, to the highest increase in lexis nowadays. Due to its stability over time, it has received a prominent status among speakers of different language communities. It is not surprising that it has easily found its way into the language in the form of numerous and very colourful collocational units (*red in the face, to be red with anger, to see red*). In comparison to English data, which exhibit a strong connection between the colour term *red* and the emotion term *anger*, Croatian expressions with *red* are much more inclined to the subcategory of SHAME and EMBARRASSMENT.

While English prefers the *pink-red-scarlet-crimson-purple* range to express variation in intensity of anger (e.g. *pink-red-crimson-black with anger, red-scarlet-crimson-purple with rage*), and *white* (mostly related to fear and shock) as the emphatic form, Croatian exhibits no such ranges in the subordinate level of the category.

Slightly different in motivational interpretation is the association of the colour term *green* with the emotion concept ENVY. Underlying cognitive mechanisms employed as the motivational force behind most of the previously mentioned expressions would not explain whether the colour green actually refers to facial colour. One of the possible interpretations might bring us back to an ancient cultural model of "humoral pathology" (primarily ascribed to Hippocrates), the doctrine that is still effective in the analysis of the contemporary metaphoric expressions of emotions. According to this theory, combinations of the four fluid humours of the body—blood, phlegm, black bile and yellow bile—determined the four prototypical temperaments, namely the sanguine, the phlegmatic, the melancholic and the choleric temperament. In order to reach the appropriate interpretation of the expressions *to feel green* or *to be green with envy*, envy as an intense feeling should be associated with the bile which subsequently causes a person to feel unwell and manifests itself in the facial colour green.

The lack of a clear-cut boundary between *yellow* and *green* in historical sources has often resulted in their overlap regarding the emotional concepts they refer to – ENVY, JEALOUSY, WORRY, ANGER and SUFFERING. Despite the rising tendency of their interchangeable connection and the existence of similar expressions in different languages, no clear corpora evidence would support the claim.

Table 1. Emotional terms co-occurring with colour terms in the BNC and the CNC

Black	Grey	White	Green	Yellow	Black	Purple	Crimson	Scarlet	Red	Pink	White		Colour term		EMOTION
											1	E	LOVE	LOVE	EMOTION
												C			
								2				E	DESIRE		
												C			
									1			E	CHEERFULNESS	JOY	
												C			
												E	ZEST		
									1			C			
								1	2	7		E	PLEASURE		
									2			C			
								1		4		E	EXCITEMENT		
												C			
					5			2	6	2	9	E	ANGER	ANGER	
									1			C			
	2					1	1	5	4		9	E	RAGE/OUTRAGE		
									4			C			
											6	E	FURY		
												C			
			9									E	ENVY		
									1			C			
							1					E	IRRITATION		
												C			
	1											E	HATERED		
												C			
												E	JEALOUSY		
						1						C			
												E	SUFFERING	SADNESS	
	1	1							1			C			
								1				E	SHAME		
									2	2		C			
							3	2	8	2		E	EMBARRASSMENT		
												C			
												E	MISERY		
									1			C			
											9	E	FEAR	FEAR	
												C			
											2	E	TERROR		
												C			
							1					E	HORROR		
												C			
1											1	E	PANIC		
												C			
											7	E	SHOCK		
												C			
								1	1	1		E	MORTIFICATION		
												C			
												E	NERVOUSNESS		
		1										C			
												E	WORRY		
			1									C			

The final emotional concept FEAR is predominantly associated with the colour *white*. The connection is based on the experience of people turning pale and blood leaving people's face when exposed to shock or danger. As was true of *black*, the apparent positive associations of white are not fully reflected in language. The number of collocational units in Croatian is substantially lower than in English. The reasons for it may lie in the co-existence of another lexical term – *blijed* (*pale*).

Conceptual Motivation

In line with the bulk of recent cognitive developments and the bodily bases of language and cognition, the findings suggest two relevant sources of conceptual motivation – conceptual metaphor and metonymy. The major tenets of the usage-based model (Langacker, 2000) will help us analyse some of the linguistic instantiations retrieved from the corpora.

Niemeier (1998) suggests metonymically based metaphors as primal examples of colour associations and natural prototypes. As already mentioned, blood is a well-known standard of redness and therefore often cited as a metaphorical motivation to describe emotions, e.g. anger (*red in the face, go red, red with anger, see red, make someone red-hot, red-headed, be a red flag to someone*). If we take a look at the linguistic unit *to go red*, we can see that its complex meaning cannot be reduced to just a facial colour.Moreover, we know that this colour is a symptom of physiological reaction to feelings of shame, anger or physical exertion. The initial categorisation of the colour red against the complex colour category behind the adjective *red* will not help us detect the right hue. However, if we consider the redness of the face as an instance of EFFECT FOR CAUSE metonymy, we could simultaneously activate our knowledge of the related emotions and complete the final stage of categorisation in our attempt to detect the right hue of red. It is also a part of general knowledge structures that the exact redness of the face behind the linguistic expression is far beyond its prototypical designation. Due to the essential sameness of human beings and their physiological functioning across cultures, this body-based conceptual metonymy has been regarded as ubiquitous in all cultures, if not "universal". Most of the retrieved corpus data are consistent with the PHYSIOLOGICAL EFFECTS OF AN EMOTION FOR EMOTION/EFFECT FOR CAUSE metonymic mapping. These types of metonymy seem extremely productive in everyday life, partly because they are associated with our folk model understanding of human body symptoms and feelings. In order to avoid the dilemma of the "appropriate" interpretation as either the conceptual metonymy physiological EFFECTS OF AN EMOTION FOR EMOTION, or the conceptual metaphor CHANGE OF COLOUR IS A CHANGE OF STATE, we would try to suggest Kövecses' (2000) line of reasoning concerning metaphor-metonymy relationship, and the newer version of

conceptual metaphor theory that acknowledges the integration of universality and culture (Gibbs 1999, 2003).

Thus, both speakers of English and Croatian might be *green with envy*, *red with anger*, or *white with fear*, but hardly ever would Croatians *feel blue* or be *purple with rage*. A large body of other research has shown that such expressions are somewhat problematic because, aside from their universal character (as a result of psychological and physiological processes), they are also conceptual structures cultural in origin (Kövecses 2000).

Conclusion

The aim of this paper was twofold. First, we explored the salience of some colour terms in their co-occurrence with the emotional terms based on the available empirical data. Secondly, we offered some cognitive mechanisms as the underlying motivational force in creation and interpretation of the individual linguistic expressions.

The research into two national corpora point to the following conclusions: (i) the highest cluster of emotional categories is organised around three basic colour terms: *red, white* and *green*, (ii) the colour term *red* is highly dominant in both languages, (iii) English prefers larger variety of colour range and offers subtler nuances in order to depict the exact intensity of emotions, (iv) colour words go well beyond their perceptual quality, (v) there is a wide discrepancy between the scope of human conceptual categories and the amount of linguistic units rendered to communicate them, (vi) the findings suggest that cross-linguisticsimilarities originate in universal human experiences, whereas differences and in culture-specific variables, (vii) it is inevitable to employ cognitive mechanisms such as metaphor and metonymy to extend the meanings of the existing linguistic expressions, (viii) the most productive metonymic mapping among the retrieved data isPHYSIOLOGICAL EFFECTS OF AN EMOTION FOR EMOTION/EFFECT FOR CAUSE, (ix) although the fruitful interplay of both cognitive mechanisms – metaphor and metonymy – account for majority of meaning extensions, knowledge of the world, knowledge of the language and relevant cultural factors should not be ignored.

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