

Color associations

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Red, blue, yellow etc. are not just colors. These are emotions, feelings, memories, reflections, associations. They play a very important role of signs or symbols. Seeing a color or thinking about color produces a certain reactions in our mind. If this association is quite stable and regular it becomes a part of the semantic structure of the color-word. Close Indo-European languages such as Russian and English have more or less similar system of color terms. Nevertheless Russian and English color terms denoting the same colors might have different components in their semantics. One of the best ways to find out what is universal and what is nationally specific in how we react to color is to perform a psycholinguistic experiment. The psychologists believe that there is a mental model of color which is always presenting in our mind, so seeing the color or thinking about it doesn't make any difference in terms of our psychological reaction, since when we think about certain color our mind immediately finds the corresponding color model. Hence we may use the color terms as well as color itself as a stimulus in the experiment. In the course of the experiment Russian and English speaking respondents were asked to write all the associations which occurred to them as a reaction to seeing the following color terms:

White / Beliy

Black / Cherniy

Red / Krasniy

Green / Zeleniy

Yellow / Zheltiy

Blue / Sinii

Goluboy (light blue – only for Russian respondents)

Brown / Korichneviy

Grey / Seriy

Pink / Rozoviy

Orange / Oranzheviy

Purple / Fioletoviy

The technique of “free association” was used as the most effective way to reveal the spectrum of possible associations to the color terms: the respondents were not given any time or subject restrictions – the number of associations and their domain was not limited. There were 20 Russian and 17 English respondents who took part in the experiment. As a stimuli we chose so called basic color terms – a number of the color-words which were considered to be “basic” by the native speakers. The criteria for identifying basic color terms are still not quite clear although any native speaker can name them without any difficulty. The composition of the Russian and English basic color terms is quite similar except for Russian *goluboy* (light blue). There is no corresponding English color term since English *blue* covers both light blue and dark blue color fields.

The final purpose of the experiment is to define the components of the semantic structure of the color terms and to establish differences and similarities in Russian and English color concepts.

As a result of free association method the findings are very diverse. For an adequate interpretation of the results an appropriate classification is needed. To do this we first of all divide all the findings into *universal* and *situational* categories.

The universal associations are usually expressed with a help of one or two words. They are highly frequent and as a rule have no correspondence to the personal experience of the respondent (e. g. *sun, happy*).

The situational associations are much more rare, they are often more extended – a phrase or a sentence – and have a straight connection with personal feelings and memories of the respondent (e. g. *my living room – my favorite color, the towels my mom gave me when I went to college – they were hot pink*).

The universal associations are the most important for us since they show a stable and regular reaction to the color term and therefore they serve as a significant component of the semantic structure of the word. The more universal associations a color term evokes the richer semantics it has. The color terms with the richest semantics can be used in a larger number of the contexts and consequently play a greater role in the national language.

Secondly, all the associations may also be divided into *abstract* (e. g. *anger*) and *concrete* (e. g. *blood*) categories.

Thirdly we have *material*, *sensory* and *emotional* associations. Material associations denote objects (e. g. *apple*). Sensory associations deal with the process of perception (e. g. *warm* – tactile perception, *bright* – visual perception). Emotional associations convey feelings, emotions (e. g. *passion*, *shame*).

As an example we will analyze the associations for the word *red / krasniy*. In the following table the whole set of red-related associations is presented. Despite the smaller number of English speaking respondents as compare to Russian, they gave more associations to *red* than the Russian respondents.

Color term	Associations	Number	Color term	Associations	Number
Red 58	Stop	5	Krasniy 62	Krov (blood)	7
	Hot	5		Stast (passion)	5
	Anger (angry)	4		Flag, znamia (flag)	4
	Blood	4		Opasnost (danger)	3
	Danger	4		Bik (bull)	3
	Fire	3		Zvet svetafora (traffic light)	2
	Roses	3		Agressia (aggression)	2
	Heat	2		Yabloko (apple)	2
	“In the red”	2		Zhar (heat)	
	Apple, juicy apple	2		Predatelstvo (betrayal)	
	Bright			Privlekatelnost (appeal)	
	Colorful			Bol (pain)	
	Barns			Pydjak (jacket)	
	Squirrels			Sovrashenie (seducing)	
	Rubies			Otkrovenie (revelation)	
	Warm			Pobeda (victory)	
	Grapefruit			Serp i molot (Sickle and Hammer)	
	White			Lubov-morkov (love)	
	Life			Korrida (corrida)	
	Hot woman in dress			Krasota (beauty)	
Bullfighter		Prazdnichnost (holiday)			
Wine		Ogon (fire)			
Love		Zvety (flowers)			
Spicy		Mak (poppy)			
Exclamation		Zapret (prohibition)			
Caution		Zrelost (maturity)			
Vibrant		Stop			
Sex		Extaz (ecstasy)			
Roses left on a mountain		Zhelanie videlitsiy, privlech vnimanie (a desire to attract attention, be notable)			
Aggressive		Samouverennost (self-assurance)			
Bad		Revoluzia (revolution)			
Pretty		Zakat (sunset)			
Communism		Deviza (lass)			
Alarm		Roza (rose)			

Shame		Pomidor (tomato)	
Scarlet letter		Yad (poison)	
Devils		Zapretniy plod (forbidden fruit)	
Red Square		Platie (dress)	
Passion		Pil (ardour)	
Emergency		Znachimost (magnitude)	
Sunset			
Cherries			
Life savers			
Jelly bean			
Zit			
Bull			
Siren			
Restriction			
No, negative			
Felt pen			
Coffee bean			
Kidney bean			
Neglige			
Burning			
Autumn			
Attention			

We consider associations to be universal if they appear in the list more than once or they appear both in Russian and English lists. As a result of this “universality” has two levels: “national” and “international” universality. Looking for the Russian-English corresponding universal associations we were taking into consideration not only full lexical equivalents, but also the words belonging to the same semantic field. For example we have the words *bik* and *bull* which are full lexical equivalents. However there are also words *bullfighter* and *korrida* (*corrida*) which to our opinion belong to the same semantic field. So we put all these words into the universal associations group. The same is true with the English association *stop* and Russian *zvet svetafora* (traffic light). These words have different lexical expressions but the same semantic meaning – that is why they both go to the universal associations. Other examples of this are *communism* and *revoluzia* (revolution), *sex* and *sovrashenie* (seducing), *exclamation* and *zhelanie videlitsiy, privlech vnimanie* (a desire to attract attention, be notable), *restriction* and *zapret* (prohibition).

If the association appears in the situational group, in most cases it means that a respondent has some personal reactions to the color according to his/her character, temper, experience, social, age and educational position. Nevertheless in certain cases knowing the cultural background of the respondent we are able to define a specifically national association. For

example, Russian *Serp I Molot* (Sickle and Hammer) refers to one of the very popular Soviet emblem symbolizing the union of workers and peasants.

In the following two tables you can see the categorized Russian and English associations for *red*.

English:

Associations					
Universal			Situational		
Concrete		Abstract	Abstract	Concrete	
Material	Sensory	Danger	Life	Sensory	Material
Blood	Hot	“in the red”	Caution	White	Barns
Fire	Heat	Exclamation	Vibrant	Spicy	Squirrels
Roses	Warm	Communism	Emergency	Siren	Rubies
Apple	Burning	Sex	No, negative	Bright	Grapefruit
Bullfighter	Sunset	Restriction	Autumn	Colorful	Hot woman in dress
Bull		Stop	Attention		Wine
		Pretty	Alarm		Roses left on a mountain
		Emotional	Emotional		Scarlet letter
		Anger	Shame		Red Devils
		Love	Bad		Red Square
		Aggressive			Cherries
		Passion			Life savers
					Jelly bean
					Zit
					Felt pen
					Coffee bean
					Kidney bean
					Neglige

Russian:

Associations					
Universal			Situational		
Concrete		Abstract	Abstract	Concrete	
Material	Sensory	Sovrashenie (seducing)	Predatelstvo (betrayal)	Sensory	Material
Krov (blood)	Zvet svetafora (traffic light)	Opasnost (danger)	Otkrovenie (revelation)	Bol (Pain)	Pidjak (Jacket)
Bik (bull)	Zhar (heat)	Privlekatelnost (appeal)	Pobeda (victory)		Zveti (flowers)

Yabloko (apple)	Zakat (sunset)	Zapret (prohibition)	Serp i Molot (Sickle and Hammer)		Mak (poppy)
Ogon (fire)	Korrída (corrida)	Stop	Prazdnichnost (holiday)		Deviza (lass)
Rosa (rose)		Revoluzia (revolution)	Zrelost (maturity)		Pomidor (tomato)
Flag, znamia (flag)		Krasota (beauty)	Znachimost (magnitude)		Yad (poison)
		Emotional	Emotional		Platye (dress)
		Zhelanie videlitsia, privlech vnimanie (a desire to attract attention, be notable)	Samouverenost (self-assurance)		Zapretniy plod (forbidden fruit)
		Lubov-morkov (love)	Pil (ardour)		
		Agressia (aggression)	Extaz (ecstasy)		
		Strast (passion)			

Now we are able to paint the semantic portrait of *red* based of the results of our psycholinguistic experiment:

- For both Russian and English respondents *red* is associated with such objects as *blood, fire, bull, apple* and *rose*. In general there is a tendency to associate red with fruit and flowers. Examples of these are *grapefruit, cherries, pomidor* (tomato), *roses left on the mountain* (a romantic turn), *zveti* (flowers), *mak* (poppy) but *apple* and *rose* have the biggest number of votes. Also red has a strong associative connection with the semantics of bull fight. We recorded such associations as *bull, bullfighter, korrída* (corrida), *bik* (bull). The reason for the existence of such associations is the following: first of all, the bullfighters use red rags to enrage a bull. Then, bull fight implies *danger, blood* and *passion* which are also very strong parts of the semantics of *red*.
- As to sensory associations, the strongest reaction is *heat* and the variations *hot, warm, burning*. However, this association is more important for the English speaking audience. *Hot* has the second frequency place in the English associations list, besides there are other words from the same semantic field (*heat, warm, burning*) whereas Russian respondents gave the corresponding reaction – *zhar*

(heat) only once. Another visually perceived phenomenon traditionally associated with *red* is *sunset* – the corresponding word appears in both Russian and English lists.

- Concerning abstract associations, the most frequent are *danger*, *beauty*, *sex*, *communism*, *a desire to attract attention* and *stop*. To the semantic field of beauty we ascribe *pretty*, *privlekatelnost (appeal)*, *krasota (beauty)*. To the English *sex* corresponds Russian *sovrashenie* (seducing) which also has a sex related meaning yet with a negative connotation. Semantics of communism is expressed in English *communism* and Russian *revoluzia* (revolution). Connection of the red color and this political direction is obvious and in Russia this connection is stronger than elsewhere. Also red is conceived by both nations as a color which attracts attention, stands out. This is the less uniform semantic field in the list: from the Russian side this meaning is expressed by a phrase *zhelanie videlitsia, privilech vnimanie* (a desire to attract attention, be notable). From the English side this is *exclamation* which is also a way to attract attention. And finally red is strongly tied with a semantics of negation, denial, restriction, prohibition. These are such associations such as *stop*, *restriction*, *negative*, *no*, *zapret* (prohibition), *zvet svetafora* (traffic light), *zapretniy plod* (forbidden fruit).
- As regards the emotional abstract associations a striking unanimity is observed: both by Russian and English speaking respondents red was associated with such emotions as *love*, *passion* and *aggression*. Russian representation of love concept in this case has an ironical connotation – *lubov-morkov* is a set expression literally translated as *love and carrots*. The combination of such a romantic thing as love and such a prosaic thing as carrots gives the expression an ironical hint. Plus the rhyme makes it sound easy and frivolous.

So we assume that the “international” semantic structure of the color term *red* consists of the following components: *blood*, *fire*, *apple*, *rose*, *sunset*, *bull fight*, *heat*, *danger*, *beauty*, *sex*, *communism*, *outstanding*, *stop*, *love*, *passion*, *aggression*.

- However we may observe certain differences in Russian and English semantics of *red*. For English respondents for instance the strongest components of the red semantics are *stop*, *hot*, *anger*, *blood*, *danger*, *fire*, *roses*, *heat*, “*in the red*”, *apple*. In

this list only *blood*, *danger* and *apple* seem to be of the same importance for the Russian respondents. The strongest English association for red is *stop* that is a traffic light. The general respect for rules and rules of the road as well is much higher in the western countries. While in Russia to cross a street when the red light is on is not a big deal. So the reflex *red-stop* is not as strong and consequently the corresponding component is not fully developed in the semantic structure of Russian *krasniy* (red).

- English idiom “in the red” has no analogue in Russian language therefore red means being in debt only for English speaking person. There is no such component in semantics of *krasniy*.
- Also we should underline that the semantic structure of *red* is mostly formed by the fact that this color is widely used in social services such as fire-truck, emergency etc. as an emblem of urgency, danger, alarm. From this come the associations *caution*, *alarm*, *emergency*, *life savers*, *siren* whereas Russian respondents pay no attention to the social role of red.
- The strongest Russian associations for *krasniy* are *krov* (blood) and *strast* (passion). The semantics of Russian *krasniy* was also powerfully influenced by the fact that the ruling, communistic party, was for long time using red as an official political and governmental symbol. Therefore there are a large number of associations belonging to the semantic field *communism*: *flag*, *znamia* (flag), *pobeda* (victory), *Serp I Molot* (Sickle and Hammer), *revoluzia* (revolution).
- The great role in the process of developing a semantic structure of the color term *krasniy* played the history of this word, its etymology. Word *krasniy* hasn't been used to denote the color *red* for a long time. Originally *krasniy* meant *beautiful*, *attractive* and as to the color term red completely different lexems were used (e. g. *chervleniy*, *bagrianiy*). Due to some linguistic changes the original meaning of *krasniy* was replaced by the color meaning, but the semantics of beauty still forms a considerable part of the meaning of *krasniy*. This is proved by the following associations: *privlekatelnost* (appeal), *krasota* (beauty), *prazdnichnost* (holiday), *deviza* (lass). *Krasnay deviz* is a set expression used mostly in the folklore. In this expression *krasniy* is still used in its first meaning – beautiful, therefore *krasnay deviza* is not a *red girl* but *bonny lass* or *fair maiden*.

- There is also an interesting background for the association *pidjak* (jacket). In the times of perestroika when so called nouveau riche or *noviy russkiy* (new-Russian) began to appear in the country by some reasons the red-colored jackets were very popular among them. With time it became a symbol of a nouveau riche – a person almost without any education or connections who became very rich in no time thanks to his own smartness, persistence and unscrupulousness.

So we may conclude that semantic structure of the color term *red / krasniy* has quite similar components both in Russian and English languages. Red is associated with the most intense emotions and states which vary from positive, pleasant – *love, passion, sex, beauty, adour* - to negative and unpleasant - *aggression, danger, pain, betrayal, seducing*. Red is perceived as *hot, bright, loud (siren)* and *spicy* which also implies a certain intensity of tactile, visual, taste and auditory perceptions. Both languages consider *blood, fire, sunset, rose* and *apple* to be the best representatives of the red color in nature. Concerning the national differences in the semantic structure of red they are caused by cultural, political or purely linguistic factors. So we assume that color in general and red color in particular is able to evoke certain kinds of material, abstract, sensory and emotional associations which stay quite stable in both the Russian and English languages. Our experiment proves that the nature of color is more complicated than just a wave-length. It contains emotional and symbolic components as well as purely visual ones.

Certain associations are specific to a country or region, while others are universally recognized—being rooted in human anatomy or observable natural phenomena. Some colors can have different meanings, even opposing meanings, based entirely on context and application. While there are many, many factors that come into play when coming up with a design’s color, this should certainly be one of them. By knowing that red and yellow are the most visually attention-grabbing colors, you might design a better billboard.