

The categorization of colors and their expressions in German and French: a contrastive study based on Cognitive Linguistics

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1. Introduction

Focus of my talk

- Categorization of colors in different languages (Romance and Germanic)
- Linguistic structures with color terms, more specifically causal constructions

(1) Germ. *Peter ist rot vor Wut* (lit. 'Peter is red of anger')

(2) Fre. *Marie est verte de jalousie* (lit. 'Maria ist green of jealousy')

(3) Ital. *Sono rosso di rabbia* (lit. 'I am red of anger')

(4) Engl. *He was blue from the cold*



Why is it interesting?

- everybody knows colors, can talk about them
- much variation
- same color terms in Romance and Germanic languages,
but used differently in different languages
- can be used in same syntactic structure, but different meanings
- difference between use of color terms generally and their
use/meaning in specific constructions

Structure of my presentation

- Examine and describe causal constructions with color terms
- Illustrate the variation, also with related examples with non-color adjectives
- Linguistic model: Cognitive Linguistics (+ metaphor and metonymy)
- Contrastive analysis (French vs. German) with data from the corpora of the Sketchengine
- Tests with French-speaking and German natives

Why Cognitive Linguistics ?

- advocates strong link between language and cognition
(Dirven & Ruiz de Mendoza 2010)
- Language meaning = result of conceptualizations and categorizations
“Cognitive Grammar [...] equates meaning with conceptualization”
(Langacker 1987: 5)

E.g. E: *pavement; sidewalk*
F: *trottoir*;
D: *Bürgersteig*;
NL: *voetpad*



- Need to analyze language in relation with speakers and cognitive processes when using language → ‘usage-based’
- Applies to conceptualization of color terms

2. Studies on color terms

Great interest among linguists and psycholinguists

➤ See long reference list in Caivanio and Becerra (2007)

- **General studies:** Mollard-Desfour (1998), (2000), (2002), Pastoureau (1992), (2002), Plümacher/Holz (2007), Van Leeuwen (2010)
- **Comparative studies** of color expressions in different languages: Adams/Osgood (1973), Bochnakowa (1990), Glanemann (2003), and Williams et al. (1970)
- **Universality vs. Linguistic relativity hypothesis:**
Berlin/Kay (1969), Glanemann (2003), Lucy (1992) and (1997), Osgood et al. (1975), Roberson et al. (2005), and Rosch (1972)

- **Universality vs relativity hypothesis:**
 - Berlin & Kay (1969): 11 **universal** basic color categories
 - in different speech communities



■ Universality vs relativity hypothesis:

- Wierzbicka (1990): contrastive study of color terms in English, Russian, Polish and Hungarian
 - rejects the universality principle;
 - Berlin/Kay fail to investigate ‘meaning’ and ‘boundaries’ of color terms;
 - advocates linguistic relativity hypothesis

Weakness of many studies:

- study color terms out of context (Wierzbicka 1990)
- Lucy (1992: 186):

the pragmatic use of color terms in context has hardly been investigated.

Critique is justified:

- If comparison of color terms and concepts out of context
- more similarities between F, E, D: similar number of colors, similar hues



- But if study of colors in a specific (non-)linguistic context
→ differences at several levels

e.g. traffic lights

F: *orange*

D: *gelb* ('yellow')

E: *yellow/amber*



→ in specific constructions:

e.g. F: *Il est **vert** de jalousie*

‘He is **green** of jealousy’



D: *Er ist **gelb** vor Neid/Eifersucht*

‘He is **yellow** of envy/jealousy’



Present study in line with relativity hypothesis

- exploration of color terms
- in different speech communities (French and German)
- realized in causal construction

[*être* 'to be' + color adjective + prepositional noun phrase]

➤ Answer to Lucy's critique (1992)

3. The causal construction with a color adjective

- French: [être + color adjective + de + noun]
German: [sein + color adjective + vor/von + noun]
English: [to be + color adjective + of/from/with + noun]

Some French examples (<http://the.sketchengine.co.uk>)

- (5) *Lecoq était devenu vert de colère* (03997)
Lit. 'Lecoq had become green with anger'
(6) *Elle est verte de peur, morte de trouille!* (10573)
Lit. 'She is green with fear, frightened to death'
(7) *J'étais rouge de honte et baissai la tête...* (01348)
Lit. 'I was red of shame and hanged my head...'
(8) *La façade de l'immeuble était noire d'histoire* (05721)
Lit. The front of the building was black with history'

(i) Copula verb: *to be, to become, to remain*

(5) *Lecoq était devenu vert de colère* (03997)

Lit. 'Lecoq had become green with anger'

(ii) Color adjective:

- Basic colors: red, blue, green, yellow, white, black (Berlin & Kay 1969)
- «*Concepts anchored in certain 'universals of human experience'*»
as «*we project them onto something in our shared environment*»
(Wierzbicka 1990: 99): fire/the sky/trees/the sun/...

(ii) Color adjective:

- more rarely: grey, brown, purple, orange

(9) *Dehors sous le ciel gris de rage contenue,...*(957627)

lit. 'Outside under the sky grey of contained anger'

(10) *L'homme est devenu violet de rire* (1077266752)

lit. 'The man had become purple with laughing'

(iii) Prepositional phrase

Expression of causality:

Radden & Dirven (2007: 327)

Causes are situations which trigger off another physical or psychological situation as their effect.

■ Noun

➤ Strong emotion: *anger, fear, jealousy, envy, embarrassment,..*

(11) *Pierre est rouge de colère*

lit. 'Peter is red with anger'

➤ Environmental influence (e.g. temperature)

(12) *Die Sportler sind rot, die Blaser blau vor Kälte.*

lit. 'The sportsmen are red, the wind players blue from the cold'

■ Preposition

F: *de (à cause de)*; D: *von/vor*; E: *of/from/with*

D: *von* → external cause; *vor* → emotion

(13) *Seine Haare waren grau vom Staub*

Lit. 'His hair was grey from the dust'

(14) *Sie war **rot** vor Scham*

Lit. 'She was red of shame'

E: *of* → direct cause; *from* → indirect cause;

with → concomitant emotion (Radden & Dirven 2007)

(15) *He died of heart-failure*

(16) *He died from an overdose of drugs*

(17) *He went red with anger.*

Meaning of causal construction with color adjective

Color adjective in causal constructions can refer to:

(i) the color category itself

(18) F. *Hoffmann, son nez était noir de tabac* (SketchEngine, 09713)

Lit. 'Hoffmann, his nose was black from tobacco'

(19) F. *Les étiquettes étaient brunes de poussière* (17335)

Lit. 'The labels were brown from dust'

(ii) Expression of emotional state by metonymy

(20) D. *Peter ist rot vor Wut*

Lit. 'Peter is red with anger'

- Color term = metonymical expression of a particular physical state caused by the feeling or the emotion in the nominal phrase

- **Soriano/Valenzuela** (2009: 423):

- the color change is the 'result of a rising body fluid'.

the colour refers to a body fluid that intervenes (or is believed to intervene) in the experience of the emotion at stake. In the case of anger the fluid is blood, which rushes to the neck and face areas when we feel outraged.

- **Niemeier** (1998: 126)

- colors → productive metonymical domain:

(21) [...] ils étaient tous *pâles* de terreur et certains ont commencé à vomir. (05302)

Lit. 'They were all *pale* of terror and some have started to vomit'

(22) Il était *jaune* d'indigestion.

Lit. 'He was *yellow* of indigestion'

- Metonymy: COLOR OF THE FACE FOR PHYSICAL STATE

(iii) a specific state by metaphor

(23) F. *Je suis rose de bonheur*

Lit. 'I am pink of happiness'

<http://www.gazette-besancon.fr/2010/02/23/jean-louis-fousseret-je-suis-rose-de-bonheur/>

Metonymical and metaphorical uses:

- Expression of intensification ('augmentative meaning')

4. Related constructions

➤ Causal constructions with non-color adjective

(24) F. *Il est triste de la perte de sa mère.*

Lit. 'He is sad of the loss of his mother'

(25) F. *Cette ville est malade, m'écrit Durito, malade de solitude et de peur* (02953)

Lit. 'This town is sick, Durito writes to me, sick of loneliness and fear'

(26) F. *Fous de jalousie, Marc et les filles décident de monter un plan de bataille* (00804)

Lit. 'Crazy of jealousy, Marc and the girls decide to set up a battle plan'

(27) D. *Er ist tot vor Hunger*

Lit. 'He is dead of hunger'

➤ Homonym constructions

Same syntactic structure [ADJ+PP], but no causal meaning!

(28) *Etre sûr de quelqu'un*

Lit. 'to be sure of someone'

(29) *Etre fier de son diplôme*

Lit. 'to be proud of one's degree'

(30) *Elle est très belle de visage* (« Construction converse », Salles 1998: 122)

Lit. 'She is very beautiful of the face' = a beautiful face

➤ *Être bleu de* (in Belgian French)

Syntactic structure: [*X est bleu de Y*] (always same color adjective *bleu*)

Lexicalized meaning = to be crazy about someone or something, not causal!

(31) F. *Je suis bleue de linguistique*

lit. 'I am crazy about linguistics'

(32) F. *Il est bleu de toi*

lit. 'He is crazy about you'

(33) F. *Maria est bleue de cette chanson*

lit. 'Maria is crazy about this song'

Color adjective not metonymical like in

(34) D. *Die Kinder sind blau vor Kälte*

lit. 'The children are blue from the cold'

[X est bleu de Y] → Phraseme-construction

(Fleischer 1997: 130ff 'Phraseo-Schablone'; Dobrovol'skij 2011: 113; Rostila 2012:265)

PhK können als Konstruktionen definiert werden, die als Ganzes eine lexikalische Bedeutung haben, wobei bestimmte Positionen in ihrer syntaktischen Struktur lexikalisch besetzt sind, während andere Slots darstellen, die gefüllt werden müssen [...] Dobrovol'skij (2011: 114)

'PhK can be defined as constructions which have a lexical meaning as a whole and in which some positions in their syntactic structure are lexically filled, while others are slots which have to be filled.'

5. Contrastive study of color terms in causal constructions in French and German

5.1. Frequency differences in use of color terms between F and D

➤ Color terms in general

- Corpora of 'Sketchengine': French corpus frWaC and German corpus deTenTen (<http://the.sketchengine.co.uk>)
- Basic color terms *white*, *black*, *red*, *green*, *blue* and *yellow* in F & D corpora independently of the construction

➤ First observation: Frequency differences F/D

Color term in German	Number of hits in German corpus	Frequency per million	Color term in French	Number of hits in French corpus	Frequency per million
weiß	901 683	317.0	blanc	251 230	154.3
schwarz	301 424	106.0	noir	222 122	136.4
rot	294 935	103.7	rouge	172 734	106.1
grün	219 397	77.1	vert	179 844	110.4
blau	143 606	50.5	bleu	120 977	74.3
gelb	87 928	30.9	jaune	65 648	40.3

Table 1: Frequency of color terms in French and German corpora

➤ Except for 'white', higher frequency in F than in D

➤ Color terms in causal construction

Color term In German	Number of hits in German corpus	Color term In French	Number of hits in French corpus
weiß	5	blanc	11
schwarz	10	noir	67
rot	8	rouge	14
grün	3	vert	19
blau	0	bleu	0
gelb	0	jaune	3

Table 2: Frequency of color terms in causal construction

➤ French uses color terms more frequently than German in causal construction

➤ **Reasons for frequency differences** are **typological**:

- F= 'analytic language' vs. D= 'synthetic language' (Siemund 2004)
- Causal constructions with color term express excessiveness, exaggeration
- German favors '**augmentative compounds**' (Lohde 2006: 64) for expression of excessiveness

(35a) F. *Marie est verte/morte de peur* (causal construction)

lit. 'Maria is green/dead of fear'

(35b) D. *Maria hat Todesangst* (compound)

lit. 'Maria has death fear'

(36a) F. *Je suis bleue de froid* (causal construction)

lit. 'I am blue of cold'

(36b) D. *Mir ist eiskalt* (compound)

lit. 'to me is ice cold'

Causal construction with non-color terms: same observation

(37a) Fr. *Anne est morte de faim* (causal construction)

Lit. 'Anne is dead of hunger'

(37b) Germ. *Anne hat einen Riesenhunger/Bärenhunger* (compound)

Lit. 'Anne has a giant hunger'

(38a) Fr. *Il est mort de soif* (causal construction)

Lit. 'He is dead of thirst'

(38b) Germ. *Er hat einen Riesendurst* (compound)

Lit. 'He has a giant thirst'

(39a) Fr. *Il est malade d'amour* (causal construction)

Lit. 'He is sick of love'

(39b) Germ. *Er ist liebeskrank* (compound)

Lit. 'He is love sick'.

➤ German compounds focus on comparison meaning,
French causal constructions on causality

2 Surveys to confirm hypothesis:

➤ French speakers use fewer compounds than German speakers

Participants:

- 17 Belgian French-speaking students of Romance languages at the Université catholique de Louvain
- German natives: 4 students + 8 non-student adults

Test design:

- questionnaire in the mother tongue asking for alternative ways of expression, e.g. *‘How can you say that ... someone is very hungry, someone is very thirsty, someone is very unhappy,...’*
- Each questionnaire contained 10 questions; several answers possible for each question

Comment peut-on dire en français ?

- que quelqu'un a fort faim
- que quelqu'un a fort froid.....
- que quelqu'un est très malheureux.....
- que quelqu'un a fort peur.....
- que quelqu'un a beaucoup de succès.....
- que quelqu'un est fort pâle.....
- que quelqu'un est très jaloux.....
- que quelqu'un a de fortes craintes.....
- que quelqu'un est fort en colère.....
- que quelqu'un a fort soif

Results

	French-speaking group	German-speaking group
Compound	/	32 %
Causal construction with a verb	6.8%	0.03 %
Causal construction with an adjective	4.7%	0.01 %
Nominal group + another noun	3%	/
Adjective as noun	7.6%	/
Noun/Verb + adjective	2.1%	0.02 %

5.2. Differences in meaning and use of color terms between F/D

- Survey with F and D speakers
- Earlier surveys by Soriano and Valenzuela (2009) and Simmons (2011) with pre-selected associations
- Our survey: contrastive, no pre-selected associations

Participants

- 26 French-speaking students of Romance languages at the Université catholique de Louvain in Belgium
- 26 German students of different subjects (Romance languages, cultural studies, politics, history, but also engineering, biology, ...) at the University of Jena in Germany

Part I: free association test

- 11 basic colors defined by Berlin and Kay (1969)
- which emotion associated with the specific colors?

Quelles émotions associez-vous aux couleurs suivantes?

Couleurs	
blanc	
noir	
rouge	
bleu	
jaune	
vert	
mauve	
orange	
brun	
gris	
rose	

Part II: cloze test with colors

- Both groups of participants received example of causal construction in their mother tongue:

Pierre/Marie est ... de joie/jalousie/bonheur/...

Peter/Petra ist ... vor Freude/Eifersucht/Glück/...

‘Peter/Petra is ... from/of joy/jealousy/ happiness/...’

- + list of basic emotions, e.g., happiness, jealousy, anger, rage,...
- Task → cloze test: add a color term to the construction containing a specific emotion
- several combinations possible

Rajoutez une (ou plusieurs) des couleurs citées:

Couleurs: blanc, noir, rouge, bleu, jaune, vert, mauve, orange, brun, gris, rose		
Pierre/Marie est		de joie
		de jalousie
		de bonheur
		de colère
		de crainte
		d'envie
		de rage
		d'embarras
		de haine
		de douleur
		de honte
		de peur
		de dégoût
		de frustration
		d'amour

Results of Part II

In causal construction some colors are more dominant in specific language

<i>Colors</i>	German	French
white	9.0 %	5.8 %
black	9.0 %	9.3 %
red	33.2 %	28.8 %
blue	6.7 %	8.9 %
yellow	10.0 %	6.7 %
green	6.9 %	19.5 %
purple	4.9 %	3.1 %
orange	2.8 %	2.2 %
brown	4.9 %	3.1 %
grey	5.9 %	4.7 %
pink	6.7 %	8.0 %

→ More differentiated picture:
 relation color/emotion in specific language

Colour	Emotion	French	German
Red	Love	46.7 %	60.0 %
	Anger	67.9 %	69.2 %
	Schame	63.3 %	65.2 %
	Embarrassment	44.8 %	62.5 %
	Happiness	17.2 %	28.0 %
	Hate	37.0 %	32.3 %
	Pain	36.7 %	33.3 %
	Frustration	20.7 %	18.5 %
Green	Envy	20.7 %	5.9 %
	Jealousy	63.0 %	21.4 %
	Rage	39.4 %	3.8 %
	Fear	35.3 %	0 %
Yellow	Disgust	31.0 %	19.3 %
	Envy	17.2 %	58.8 %
	Jealousy	7.4 %	28.6 %
	Joy	24.0 %	25.0 %
	Happiness	13.8 %	16 %

		French	German
Pink	Joy	24.0 %	3.6 %
	Happiness	31.0 %	12.0 %
	Love	25.7 %	30.0 %
	Embarrassment	13.8 %	25.0 %
	Shame	6.7 %	21.7 %
Blue	Fright	20.0 %	12.0 %
	Fear	29.4 %	7.4 %
White	Fear	20.6 %	52.0 %
	Fright	20.0 %	36.0 %
Black	Hate	47.0 %	37.0 %
	Pain	16.7 %	7.4 %
	Trouble	17.9 %	30.8 %

Statistical significance of survey results

checked with chi-square test (with df = 14)

Colors	P-value
white	$p > .05$
black	$p > .05$
red	$p > .05$
blue	$p < .05$
yellow	$p > .05$
green	$p < .001$
mauve	$p > .05$
orange	$p > .05$
brown	$p > .05$
grey	$p > .05$
pink	$p > .05$

Differences between F & D in color term selection for some emotions

- Statistical significance of the differences in the number of occurrences of the color terms in the French and German corpora calculated with a chi-square test
 - Green is very significant (with $df = 14$, $p < .001$)
 - Blue is slightly significant (with $df = 14$, $p < .05$)
 - Other color terms do not differ from each other in a significant way in German and French
 - But: small number of participants!

5.3. Selection of colors for positive/negative emotions

Emotions positive (+) or negative (-)	French	German	Metaphor/Metonymy
(+) love, passion,...	Red	Red	Metaphor
(-) anger, ire,...	Red	Red	Metonymy
(-) jealousy, envy	Green	Yellow	Metonymy
(-) fear, worry	Blue	White	Metonymy
(-) hate, pain, trouble	Black	Black	Metaphor

Table 3: Selection of color terms in causal construction by F and D participants

- Most color terms associated with emotions by metonymy → ‘fluid rise’ (Soriano/Valenzuela 2009: 423)

5.4. Comparison of results of Part I and II

➤ Different associations dependent on context

Hypothesis:

- Color adjective gets its associative value from the construction
 - This value may differ from the value associated with the adjective in general
- Could indeed be observed with comparison of 2 survey parts

➤ Different associations dependent on context

Color term	in causal construction (Part II)	out of linguistic context (Part I)
White	(-) anxiety, fear	(+) purity, cleanliness, clarity, well-being, freshness, calm, peace, new beginning, innocence, respect
Green	(-) jealousy, rage, fear or disgust	(+) freedom, hope, freshness, peace, calm, goodness, optimism, balance, affection

Table 4: color terms in general vs. in causal construction

6. Conclusions

- **Conceptualizations of colors are language-specific**

- **No complete overlapping in the use of color terms in French and German:**

- Selection of different color terms in the causal construction
- Different associations with color terms

- **Frequency differences**

- due to typological differences
- depend on favorite 'lexicalization patterns',
D: compounding vs. F: analytic expressions

- **Different conceptualizations/connotative meanings**
- **in one and same language:**
 - dependent on context (general or specific linguistic structures, e.g. causal constructions)
 - 1 color category can be associated with positive or negative feelings
- **in one and same construction:**
 - different speech communities will use 1 concept/category/color in different ways;
e.g. *green* in F vs. *yellow* in D

➤ Consider speech community

e.g. 'red' = dominant color in both communities,

but 'green' and 'blue' = favored in French community

➤ Negative or positive associations in a speech community for specific emotions

e.g. in French: (+) 'pink', 'blue' and 'red'

(-) 'green', 'red'

in German: (+) 'red'

(-) 'red', 'white', 'yellow'

➤ Sustains linguistic relativity hypothesis

Implications for foreign language learning:

- **Need to describe (color) terms in larger sequences**
- **Take into account lexicalization preferences in specific languages**
- Difference between more analytic Romance languages vs. synthetic Germanic languages

Thank you!



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