

Metaphors in Polish, English, Russian, and French perfumery discourse

A comparative study

Magdalena Zawisławska and Marta Falkowska

University of Warsaw

This paper examines metaphors in perfume reviews in four languages, namely Polish, English, Russian, and French. Some typical features of the perfumery discourse, similar across the four languages, have been highlighted, such as clustering, extension, and mixing metaphors. The authors also discuss the most typical schemata used in the conceptualization of perfumes. Although the analyzed texts exhibit a certain similarity, a statistical analysis of the reviews identifies some interesting discrepancies between the languages, that is: unequal distribution of metaphorical types, preferences in usage of perceptual and non-perceptual source frames, and variance in perfume conceptualization (PERFUME IS A WOMAN VS. PERFUME IS A MAN).

Keywords: metaphor, perfumery discourse, synesthesia

1. Introduction

Smell is a sense evaluated ambiguously in Western culture. On the one hand, olfaction is depreciated as it has been considered a low sense by philosophers since antiquity (see Howes, 2002; Le Guérer, 2002). A view that “olfaction produced indefinite sensations” was voiced by Aristotle (see Cain, 2012, p.204) and has been reprised repeatedly over the centuries (see Le Guérer, 2002). Classen, Howes, and Synnot (2003, p.3) suggest that:

smell [...] is a highly elusive phenomenon. Odours, unlike colours, for instance, cannot be named – at least not in European languages. ‘It smells like...’, we have to say when describing an odour, groping to express our olfactory experience by metaphors.

The lexical olfactory field is indeed smaller as compared with the fields of visual or auditory perception, and olfactory perception is charged with subjectivity and

hedonic valence (Barkat-Defradas & Motte-Florac, 2016). This is especially apparent in the description of perfumes since their main function is hedonistic rather than informative. Today, smell has become a commercial product, subject to marketing and sale. Perfumery businesses lure modern society with ideal 'right' fragrances as opposed to natural, unwanted body smells. Their products not only mask unpleasant aromas but also promise to transform their user into a seductive, sexy, free, wealthy, and self-confident person.

The research project presented in this paper stems from our work on the Synamet – the Polish Corpus of Synesthetic Metaphors.¹ The aim of the paper is to analyze metaphorical expressions in perfume reviews excerpted from blogs written in four languages – Polish, English, Russian, and French. The idea behind our analysis was to identify any notable differences with regard to the use of types of metaphors and source frames within one genre (perfume review), and to verify to what extent the subjective descriptions of the globally-known fragrances can be driven by cultural and linguistic factors. To the best of our knowledge, there is a lack of such comparative analyses considering typologically different languages with a special focus on metaphors.

In each language, a set of ten reviews was analyzed. Reviews of the following perfumes for women were taken into account: 1. Christian Dior, *Pure Poison EDP*;² 2. Lancôme, *La Vie Est Belle EDP*; 3. Giorgio Armani, *Si EDP*; 4. YSL, *Black Opium EDP*; 5. Chloé, *Chloé EDP*; 6. Chanel, *Coco Mademoiselle EDP*; 7. Lancôme, *La Nuit Trésor EDP*; 8. Chanel, *Gabrielle EDP*; 9. Guerlain, *La Petite Robe Noire EDP*; and 10. Cerruti, *1881 Pour Femme EDT*.

The study is based on four mini-corpora, which contain reviews of the ten fragrances listed above. Each corpus has on average 5,100 tokens (word forms).³ The rationale for analyzing reviews of the same perfumes in four languages was twofold: the reviewers described the same fragrances, and the extralinguistic context was similar – the same commercials in the media and the analogous scent descriptions could be found on commercial websites (e.g., *Fragrantica*) or in online shops. Thus, we also set out to verify if there were any consistent relationships between the perfumes' advertisements and metaphors found in the reviews.

The inter-author analysis of individual texts in each language generally showed no statistically significant differences in perceptual frame activation and types of metaphorical expression. It follows that, in this respect, the collected corpora are consistent enough to exclude the influence of individual authors' style on

1. <http://synamet.polon.uw.edu.pl>

2. EDP 'eau de parfum' (a more intense scent containing 15%–20% of essential oils), EDT 'eau de toilette' (a lighter scent containing 10% of essential oils).

3. The Polish corpus has 5,083 tokens: English 5,427, Russian 5,654, and French 4,435.

the analyzed discourse. Detailed metadata about the texts from blogs, as well as the results of the inter-author analysis can be found in the Appendix.

This paper outlines the specificity of figurative language in the perfumery discourse and highlights the analogies as well as the main differences between the Polish, English, Russian, and French reviews. Metaphor is known to be a complex phenomenon dependent on many subtle factors. Specifically, not only culture but also language should be taken into consideration, as well as the function of metaphor and the discourse type (Gibbs & Cameron, 2008; Kövecses, 2005; Steen, 2015). Although there are significant similarities between reviews in the analyzed languages, substantial distinctions cannot be overlooked. The observed differences concern not only the selection of metaphor sources but also a preference for choosing certain types of metaphorical expression in a given language.

The structure of this article is as follows: first, we provide an essential description of the metaphor identification procedure used in the project. Then, we discuss the metaphor structure (source and target) and the typology of metaphors in discourse that we have applied. Next, we report the main results of the reviews' statistical analysis, namely the distribution of metaphors in four languages, preference in metaphor type use, and activation of perceptual and non-perceptual sources in the perfumery discourse. In the final part of the article, we discuss the implication of the similarities and differences between the analyzed languages, and we attempt to relate these findings to the linguistic system and culture.

2. Method

2.1 Preliminaries

Our analysis focuses on synesthetic metaphors with the target frame *SMELL*. We analyze linguistic expressions that result from mapping across different frames pertaining to perception (e.g., *VISION*, *HEARING*, *TASTE*) as well as verbal metaphors with non-perceptual source frames (e.g., *PERSON*, *ANIMAL*, *PLANT*).

In this section, we discuss the procedure of metaphor identification with reference to MIPVU, definition of the metaphorization process and metaphor structure, exploiting frame semantics. Subsequently, a typology of metaphors (typical, mixed, and narrative) is introduced.

The annotation procedures, frame ontology and metaphor typology were elaborated first for the Polish material within the Synamet project, and the paper employs the same methodology for the comparative analysis of texts in the four languages.

2.2 Metaphor identification procedure

The most widely known metaphor recognition procedure is MIPVU (Steen et al., 2010) which constitutes a modified and elaborated version of MIP as proposed by the Pragglejaz group (Pragglejaz, 2007; Semino, 2008). MIPVU comprises the following stages: (1) reading the whole text in order to establish its general meaning; (2) determining the lexical units that have been used in the text; (3) determining the meanings of the lexical units (the procedure requires the meaning of every lexeme to be determined in the given context); (4) determining whether each of the words has a different, more basic sense, activated in other contexts (cf. concrete, physical meanings, meanings evoking bodily action, more precise, clear meanings) (Pragglejaz, 2007, p. 3; Steen et al., 2010). Although MIPVU had been successfully applied to English and other languages (Marhula & Rosiński, 2017 discuss the application to Polish), some alterations were introduced in order to account for various atypical phenomena encountered during the analysis. In the Synamet project, the annotator first had to define referents (which we called *topics*) of the analyzed discourse. A referent in the case of perfumery discourse could be, for example, a perfume, its aroma, or its bottle. The first step was the most crucial moment in the analysis of a text, since lexemes denoting referents could easily be omitted in a sentence. Therefore, without the correct identification of a referent, whole fragments of a text might be considered (falsely) as literal, e.g. (1):

- (1) *Jaka szkoda, że ta przecudnej urody aria jest tak lakoniczna, dyskretna, ulotna i delikatna – bo aż by się chciało zatracić i przepaść z kretesem w tym zniwielającym brzmieniu...*

(<https://perfumomania.wordpress.com/tag/ultra-delikatna-i-zwiewna-woda-kolonska/>)

‘It’s too bad that this extremely beautiful aria is so laconic, discreet, light, elusive and delicate – because one would like to become completely engrossed and disappear in this captivating sound.’

The referent of this text is the perfume *Colonia Intensa* by Acqua di Parma. Though, if the broad context of this fragment had been ignored, one might recognize this example as a description of an actual musical aria.

2.3 Metaphor structure: Sources and targets

After identifying metaphorical units, the next step of the annotation was to define sources and targets of the metaphor. The analytical approach adopted in the Synamet combines frame semantics (Fillmore, 1982, 1885) and CMT formulated by Lakoff and Johnson (2008 [1980]). According to CMT, metaphors are a pri-

marily conceptual phenomenon consisting of mappings across cognitive domains (from the source domain onto the target domain). However, we followed recent works on metaphor where the concept of domain has been redefined and integrated with the concept of frame (Dancygier & Sweetser, 2014; Dodge, 2018; Lakoff, 2014; Petersen et al., 2008; Stickles et al., 2016a, 2016b; Sullivan, 2006, 2013). The reason for using frames in CMT was twofold. Frames are described as organized structures, thus enabling us to formalize the analysis of metaphors (Dancygier & Sweetser, 2014; Stickles et al., 2016a). Moreover, frame structure not only reflects a conceptual level but is also strictly linked to language at both grammatical and lexical levels (Stickles et al., 2016b). In the Synamet project, metaphors are defined as mappings across more specific frames rather than general domains (along the lines set by Moore, 2011).

In Synamet, we distinguish six perceptual frames (VISION, HEARING, TOUCH, SMELL, TASTE, and MULTIMODAL PERCEPTION – dedicated to sensations that activate several senses at a time, e.g., *convex* – VISION and TOUCH), and 55 non-perceptual frames (e.g., PERSON, ARCHITECTURE, PLANT, ARMY) (for a more detailed overview of the frame ontology in Synamet see Zawisławska, 2019). Although FrameNet, a well-developed resource often utilized in linguistic research, is available, the set of frames for the corpus of synesthetic metaphors was constructed from scratch to include all parts of speech (nouns as well as verbs and adjectives) needed to account both for the source and target frames activation.⁴ The frame ontology used in the present analysis is hierarchical, i.e., it consists of very general frames, e.g., PERSON, and within them, more specific subframes and elements, e.g., subframe CHARACTER with elements including positive character traits and negative character traits. Therefore, a sample frame annotation in Example (2) looks as follows:

- (2) *Pachnidło mógł spłodzić jedynie wybitny perfumiarz.* (<https://perfumomania.wordpress.com/2015/10/26/acqua-di-parma-colonia-intensa-czyli-kwintesencja-ulotnej-doskonalosci/>)
 ‘The scent (target frame SMELL/OBJECT OF PERCEPTION) could be fathered (source frame PERSON/SEXUALITY/AGENT’S ACTION) only by a notable perfumer (target frame SMELL/AGENT).’

4. The main reason for this decision was the fact that FrameNet is mostly valency-oriented (Ruppenhofer et al., 2016; Ziem, 2014). In the case of our project, most metaphors (66%) are nominal phrases and only 25% are sentences. In metaphorical expressions in the Synamet corpus, nouns typically activated target frames, while adjectives and verbs more often evoked source frames (see Zawisławska, 2019).

5. Words evoking source frames are underlined.

Source and target interpretative frames are evoked by framing words which we call *activators* (see Fillmore, 1982).

Based on the types of source and target frames, we distinguish two main kinds of metaphor: *strong synesthetic metaphors* – where both frames are perceptual (e.g., *sweet aroma*), and *weak synesthetic metaphors* – where only one frame is perceptual (e.g., *flirty smell*) (see Werning et al., 2006).

2.4 Typology of verbal metaphors

The last steps of annotation consisted of determining the type of verbal metaphor and providing its grammatical description (e.g., nominal phrase, verbal phrase, sentence). The types of metaphorical expressions are presented in Figure 1 below.

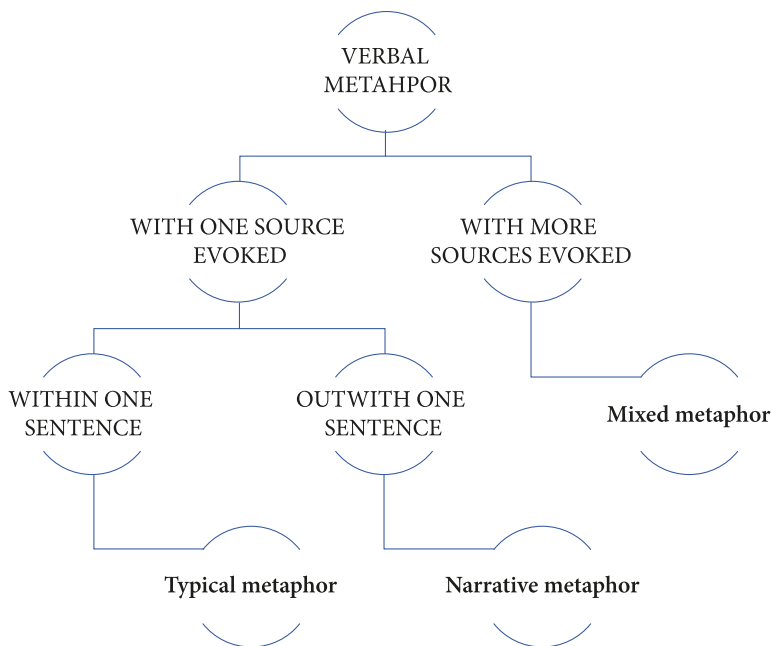


Figure 1. Typology of verbal metaphors

2.4.1 Typical metaphors

The first type of metaphor is a dually-structured (source-target) expression, e.g., *ślad jaśminu* 'trace of jasmine' (source frame VISION, target frame SMELL). That type of verbal metaphor fits the CMT schema perfectly. During the analysis of metaphorical expressions, two more complex types of verbal metaphor were

observed: mixed metaphors (see Kövecses, 2016) and narrative metaphors (see Gibbs, 2017; Ritchie, 2017).

2.4.2 Mixed metaphors

Mixed metaphors are metaphors containing elements of at least two different source frames, e.g.:

- (3) *Chanel Coco Mademoiselle to zapach niby latwy, lekki i przyjemny – cytrusy, kwiaty i trochę paczuli, prosty przepis na wiosenny bestseller.*
 (<http://pachnacehistorie.pl/2017/04/08/chanel-coco-mademoiselle/>)
 ‘Chanel Coco Mademoiselle is a seemingly simple fragrance (source frame ABSTRACT IDEAS), light (source frame MULTIMODAL PERCEPTION), and agreeable (source frame PERSON) – citruses, flowers, and some patchouli, a simple recipe (source frame COOKING) for a spring bestseller.

Mixing metaphors is a common technique in the majority of perfumery blog excerpts in the corpus. Although traditional views on stylistics and poetics regard this phenomenon as examples of bad writing yielding incongruent images (Gibbs, 2016), within the contemporary framework of cognitive linguistics various explanations of mixed metaphor acceptability have been offered (Kimmel, 2010; Kövecses, 2016; Sullivan, 2019; White, 1996). Kimmel (2010) describes mixing metaphors as cognitively successful, because they allow the speaker to cover various aspects of a target domain, while Müller (2016, p. 49) thinks that “mixing of metaphors results from dynamic activation of uncommon aspects of metaphoric meaning.”

2.4.3 Narrative metaphors

Sometimes metaphors can reach beyond the sentence boundary. In the Synamet corpus, they are called *narrative metaphors* (see Fludernik, 2009). A narrative metaphor can be viewed as a type of a more general class called *extended metaphor*, defined as “one conceptual metaphor that motivates several related linguistic expressions in the same stretch of discourse” (Gibbs, 2017, p. 47). Werth (1994) describes an extended metaphor as a construction beyond the sentence level. It exists on a discourse level and is governed by a main mega-metaphor that manifests itself through a series of micro-metaphors. Other scholars note that extended metaphors contain element of narrative. Snaevarr (2010, p. 233) proposes the term *storied metaphors*, and emphasizes that such metaphors are constituted by explicit or implicit narratives. Ritchie (2017, p. 242) calls this phenomenon a *metaphorical story*, and defines it as a “subcategory of communication in which a vehicle story is at least narrated, such that it expresses something

about, and can be mapped onto, a topic story from a totally different domain” e.g. (4):

- (4) *Hedonist Rose*⁶ to pełna dziewczęcego uroku towarzyszka, która spędzi z Tobą przy butelce wina cały dzień, od niechcenia rzucając zalotne spojrzenia i chichocząc. Od początku myślisz, że wszystko o niej wiesz, ale ciągle wyprowadza cię z błędu. Kiedy chce coś przemilczeć, rysuje palcem wzorki na zroszonej ściance kieliszka, żeby odwrócić Twoją uwagę, ale jeśli przyjrzesz jej się uważnie, dostrzeżesz melancholię. To dziewczyna o drugim dnie, które wolałaby ukryć. Mogłabym się założyć, że słucha The Smiths.

(<http://pachnacehistorie.pl/2015/03/27/viktoria-minya-hedonist-rose/>)

‘Hedonist Rose is a companion full of girlish charm who would spend the whole day with you over a bottle of wine, glancing coquettishly and giggling. From the start, you’d think that you know everything about her but she always puts you right. When she wants to hush something up, she draws patterns with her finger on a dewy glass to distract your attention but if you look closer, you will see her melancholy. She is a girl with a hidden agenda, which she would prefer to mask. I bet that she listens to The Smiths.’

Such narrative metaphors can encompass extensive stretches of discourse or even a whole text.

3. Results of the analysis

This section exemplifies selected phenomena observed in the mini-corpora, with a focus on both the similarities and differences between the analyzed languages. Finally, we hypothesize about intra- and extralinguistic factors that may influence the shaping of perfumery discourse.

3.1 Annotators’ inter-agreement

Reviews were analyzed by two annotators according to the method used in the Synamet corpus and described in the Method section above. The annotators’ inter-agreement (for two raters) was tested on English and Polish texts, with Cohen’s κ ‘kappa’ (R Core Team, 2016). Results were as follows: a moderate level of agreement for typical metaphors in both languages (for English texts $\kappa=0.72$, for Polish texts $\kappa=0.77$), a strong level of agreement for mixed metaphor in English ($\kappa=0.85$) and an almost perfect level of agreement for Polish ($\kappa=0.95$),

6. The perfume *Hedonist Rose* by Victoria Minya.

and an almost perfect level of agreement for narrative metaphors in both languages (for English $\kappa = 0.96$, for Polish $\kappa = 0.93$).

3.2 Tendencies in the use of metaphorical expressions across languages

The total number of verbal metaphors in the Polish corpus was 200, 213 in the English corpus, 159 in the Russian corpus, and 195 in the French corpus (for more detailed information – see the Appendix).

The numbers of different types of metaphor are not proportional in the analyzed reviews (the Chi-squared test results are as follows: $\chi^2 = 59.899$, $df = 6$, $p\text{-value} < 0.0001$, Cramer's $V = 0.197$). Pearson residuals show that there are determinable interlingual differences: see Figure 2.

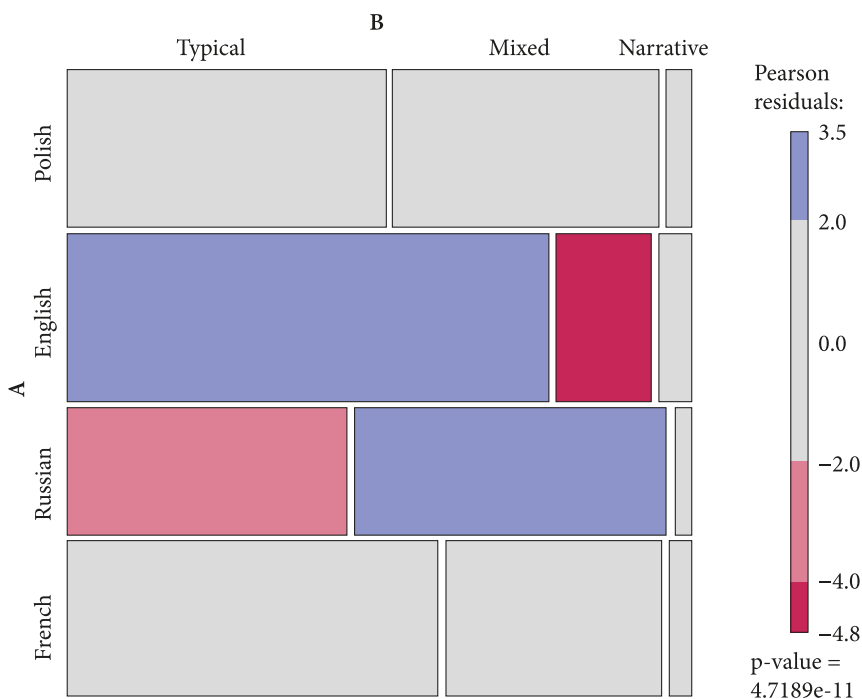


Figure 2. Pearson residuals of metaphor types in the corpora

As exhibited by Pearson standardized residuals, statistically significant differences between languages occur for all languages. The Polish reviews have fewer typical metaphors and more mixed metaphors than expected. The Russian texts have even fewer typical metaphors than the Polish and many more mixed

metaphors. The most anomalous language seems to be English with an abundance of typical metaphors and significantly fewer mixed metaphors (see Table 1).

Table 1. Standardized Pearson residuals for verbal metaphor types (for a p-value < 0.01, numbers greater than 2.58 or less than -2.58 are statistically significant)

Type of metaphorical expression	Polish	English	Russian	French
Typical	-2.83	6.47	-4.19	0.09
Mixed	2.87	-7.07	4.68	0.01
Narrative	0.05	1.00	-0.88	-0.27

3.3 Patterns of source frames activation across languages

In the reviews, all the perceptual frames were activated. The proportion of perceptual frames is language-dependent (the results of the Chi-squared test are as follows: $\chi^2 = 54.596$, $df = 12$, p-value < 0.0001, Cramer's $V = 0.16$). Pearson residuals visualize the differences between languages (see Figure 3).

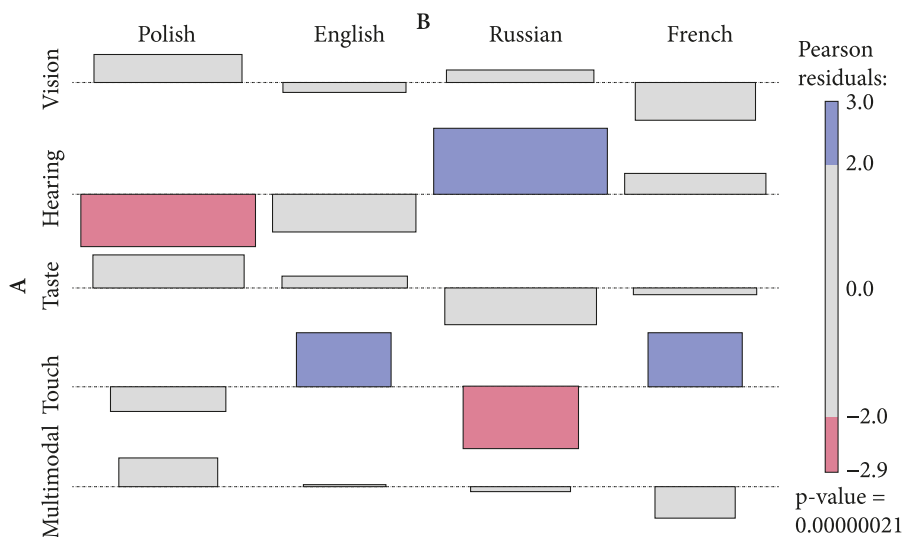


Figure 3. Perceptual frames – Interlingual differences

Table 2 shows that in the English and French reviews, words activating the TOUCH frame predominate, while this frame is the least active in Russian. The Polish reviews have fewer activators of the HEARING frame than expected, and many more activators of this frame are used in the Russian texts.

Table 2. Standardized Pearson residuals of the source perceptual frames in synesthetic metaphors (for a p-value < 0.01, numbers greater than 2.58 or less than -2.58 are statistically significant)

Frame	Language			
	Polish	English	Russian	French
VISION	1.70	-0.58	0.73	-2.20
HEARING	-3.41	-2.33	4.32	1.32
TASTE	2.05	0.68	-2.29	-0.41
TOUCH	-1.47	2.95	-3.66	2.90
MULTIMODAL	1.67	0.08	-0.27	-1.69

Only four non-perceptual source frames were activated at least five times in each language: PERSON, THING, CLOTHES, and SPACE – the results of the Chi-squared test are as follows: $\chi^2 = 40.211$, $df = 9$, p-value < 0.0001, Cramer's $V = 0.17$. Pearson standardized residuals in Table 3 show the statistically important differences between languages.

Table 3. Standardized Pearson residuals of the source non-perceptual frames in synesthetic metaphors (for a p-value < 0.01, numbers greater than 2.58 or less than -2.58 are statistically significant)

Language	Frame			
	Person	Thing	Clothes	Space
Polish	3.39	-2.98	-0.23	-0.79
English	-1.47	3.92	-1.77	-0.31
Russian	-0.43	1.26	-0.93	0.23
French	-3.31	-1.39	3.71	1.45

The analyzed languages differ in the frequency of activation of other non-perceptual frames, e.g., the SOCIETY frame was activated quite frequently in French (seven times) and in Polish (five times), seldom in English (twice), and never in Russian.

3.4 Overall characteristics of perfumery discourse

All of the analyzed reviews of perfumes share some features. Specifically, they abound in various types of metaphor which make these kinds of texts resemble poetry. Holz (2007) claims that synesthetic expressions as poetic means support for the impressive (conative) function of the perfumery discourse. The mixed metaphors in the analyzed texts can be explained by the specificity of olfactory perception which is very subjective and complex (Velasco-Sacristán & Fuertes-Olivera, 2006). Another characteristic feature of the perfumery discourse is narrative metaphor. Ritchie (2017, p. 131) believes that “[m]etaphorical stories can also help to explain technical or complex concepts.” In a composition of essential oils used in *Pure Poison* (5), a story about a personified bergamot wearing a jasmine shawl emerges.

- (5) *Wita mnie bergamotka w jaśminowym szalu, przy soku z cytrusów. Ubrana jest w niby zwykłą, ale jednak efektowną sukienkę. Wygląda ślicznie, ale nie zjawiskowo – po prostu poprawnie.*

(<http://edpholiczka.pl/2015/07/dior-pure-poison.html>)

‘Bergamot greets me, wearing a jasmine shawl, holding a citrus fruit juice drink. She is wearing a dress, in a way casual yet glamorous. She looks beautiful but not spectacular – simply properly.’

However, unlike in the texts analyzed by Ritchie (2017), perfumery narrative metaphors are rarely consistent, and there is no systematic mapping, but rather a set of subjective associations that communicate the authors’ olfactory impressions and an appraisal of the fragrance, e.g., (6)–(7):

- (6) *They’re the Empire State Building rather than the strikingly asymmetrical Reykjavik’s Harpa Concert Hall & Conference Center. The tousled hair rom-com heroine rather than Irene Dunne. And a predictably lyrical novel that reads like a self-help book by Paulo Coelho rather than Orhan Pamuk. No, strike the last aphorism out: the fragrances in question are not Coelho-bad, surely! [Si]*

(<http://perfumeshrine.blogspot.com/2013/09/giorgio-armani-si-fragrance-review.html>)

- (7) *Chloe szepta do mnie cichutko swym lekko zachrypniętym głosem. dotyka mojej skóry puszystym, perłowym piórkem. Utula mnie swym delikatnym, nastrojowym śpiewem. *Jestem coraz bardziej senna...**

(<http://perfumoholiczka.blogspot.com/2015/06/chloe-edp.html>)

‘Chloe whispers to me quietly with her little hoarse voice, she touches my skin with a fluffy, pearl feather. She tucks me with her delicate, romantic singing. I’m getting more and more sleepy.’

According to Hudson and Distel (2002, p.408), “odors are the subjective products – constructs.” Emotional and subjective factors in odor description are emphasized by various researchers (Chastrette, 2002; Classen, Howes, & Synnot, 2003; Köster, 2002). This is strongly linked with the type of text involved: on one hand, perfume reviews may be seen as instances of persuasive text (aimed at convincing the reader to buy a given fragrance); on the other hand, it happens that a sort of community is built around perfume or cosmetics blogs – one that shares impressions and emotions evoked by the objects. We think that since narrative metaphors are poetic, sometimes even close to allegory (Crisp, 2008), they allow speakers to express their views, emotions, and subjective associations (which are difficult to communicate) most accurately, and also they enable the reader to get in touch with the speaker’s internal world of thoughts and emotions and to share the subjective experience, at least to some extent.

Metaphors in the perfumery discourse can be motivated by topic or context. Koller (2004) and Semino (2008) claim that ‘topic triggered’ metaphors can be triggered by some aspect of the target domain. Kövecses (2016, p.14) argues that “in the case of “context-induced” metaphors [...] the various contextual factors may unconsciously and intuitively prime the use of source domains.” Semino (2008, p.224) observed ‘situationally triggered’ metaphors, where the choice of the “source domain or scenario is linked to some aspect of the relevant communicative situation.”

Topic-triggered metaphors in the perfumery discourse may be exemplified by the source frame TASTE employed in all the analyzed languages. Both smell and taste share the same aspect – they play a major role in distinguishing between the edible and the non-edible (Köster, 2002, p. 32), and they are biologically interconnected (for an overview of the relationship between gustatory and olfactory perception, see Winter, 2016, 2019). Therefore, many gustatory lexemes are used to describe olfactory perception, e.g.:

- (8) *The freshness of orange blossom, the tartness of citrus and the chill of iris succeed at reducing the cloying sweetness at various stages of this perfume.*
 (<https://boisdejasmin.com/2012/08/lancome-la-vie-est-belle-perfume-review.html>)
- (9) *Dlja mnogih parfjum mozhet kazat'sja slishkom sladkim i pritornym kompotom.* (<https://anasty.kosmetista.ru/blog/80240.html>)
 ‘For many people the perfume might resemble an excessively sweet and bland fruit compote.’

- (10) *Ce parfum sensuel et envoûtant vous charmera avec sa délicieuse association de rose noire et d'orchidée vanille.*
 (<http://cherryblossom.eklablog.com/la-nuit-tresor-de-lancome-a115045026>)
 'This sensual and enchanting fragrance will bewitch you with its delicious mixture of black rose and vanilla orchid.'

3.5 Contextual factors influencing metaphor production

While the TASTE source frame in olfactory metaphors seems to be used quite universally, the influence of the context (situation) on metaphors in the analyzed reviews is much more interesting and culture specific.

Some metaphorical expressions have evidently been triggered by the perfumes' advertisements. For example, *Black Opium's* commercial tells a story about a young, beautiful, brown-haired woman, dressed in black, eluding a handsome man with whom she shared a bed, and running around the streets of a city by night. The French reviewer was obviously under the influence of that ad (Example (11)):

- (11) *Black Opium est le parfum d'une héroïne rock et chic en quête d'extase. Sa signature: le noir.*
 (<http://www.lessensdecapucine.com/mon-dernier-coup-coeur-olfactif-black-opium-yves-saint-laurent/>)
 'Black Opium is a fragrance for a graceful rock heroine in search of ecstasy. Her signature: black.'

In a very dynamic *Pure Poison* advertisement, a beauty transforms into a black panther and then into a cobra. The Russian author of the perfume's review refers to the commercial and elaborates associative metaphorical expressions (*dangerous beauty, seductive power*), in Example (12):

- (12) *V reklamnom rolIKE aromata Christian Dior Pure Poison molodaja devushka prevrashhaetsja v panteru, shodja s uma ot blagouhanija Dior «Pure». Opasnaja krasota Poison Pure otkryvaet istochnik soblaznitel'noj sily.*
 (<http://www.parfum.only-u.com.ua/christian-dior-parfum/61-pure-poison-christian-dior.html>)
 'In Christian Dior Pure Poison's commercial, a young girl transmutes into a panther, going crazy because of the Dior «Pure» aroma. The *dangerous beauty* of Pure Poison opens a source of seductive power.'

According to Ritchie (2017, p.133) a "[s]ingle word can also index, or activate, metaphorical stories." Some metaphors are also activated by the perfume's proper names regardless of the language. In (13), the author describes the scent as dark, which relates to the perfume's name *La Nuit Trésor* 'night', and in (14), metaphors

with the source frame DRUGS (*une dose* ‘dose’, *un shoot* ‘shot’) are triggered by the word *opium* in *Black Opium*.

- (13) [*Paczula*] także odpowiedzialna jest za tresorowy mrok, który jest z nami przez cały czas wybrzmiewania zapachu.
(<http://zapachnidlo.blogspot.com/2016/11/lancome-la-nuit-tresor.html>)
‘[*Patchouli*] is also responsible for Trésor’s darkness which is with us the whole time while the aroma resonates.’
- (14) *Une interprétation moderne, jeune et vibrante de l’addiction. Black Opium est une dose d’adrénaline, l’énergie nécessaire pour une vie toujours plus intense. (...) Black Opium est un shoot d’adrénaline aux notes de café jouées en surdose, illuminées par les fleurs blanches et la vanille.*
(<http://www.lessensdecapucine.com/mon-dernier-coup-coeur-olfactif-black-opium-yves-saint-laurent/>)
‘A young, modern and vivid interpretation of addiction. Black Opium is a dose of adrenaline, the energy we need to lead a more and more intensive life. (...) Black Opium is a shot of adrenaline with coffee notes resounding in overdose, enlightened by white flowers and vanilla.’

The authors usually use such metaphors triggered by names of perfumes intentionally, and signal that in a text, e.g. *the fragrance itself cannot hope to live up to its name, for pure it might be, but there is nothing even remotely venomous about it* (about *Pure Poison* by Dior), or *Unlike its namesake, Gabrielle the perfume doesn’t aim for originality* (about *Gabrielle*⁷ by Chanel).

The types of metaphorical trigger seem to be specific to perfumery discourse. Ritchie (2017) argues that in literature, science, political speeches, editorial cartoons, and journalism, metaphorical stories are most often activated by verbs. However, in the perfume reviews, verbs do not seem to play a significant role in triggering metaphors while proper nouns are more important.

3.6 Creative use of metaphors exploiting conventional schemata

Basic specialist terms used in perfumery discourse are international and highly lexicalized metaphors (e.g., *note*, *accord*, *base*, *heart*). However, they can be “reopened” (Knudsen, 2003, p.1260) or “awakened” (Müller, 2017, p.300) in public discourse and that usually results in the form of a chain of implied metaphors. In Examples (15)–(18), some creative metaphors with the HEARING source frame are used:

7. The name was inspired by Coco Chanel’s given name.

- (15) *I just want a pleasant scent, not a perfume epiphany. I love opera, but I'll happily listen to pop music [...]*
 (<https://boisdejasmin.com/2012/08/lancome-la-vie-est-belle-perfume-review.html>)
- (16) *Słodka, soczysta gruszka i dojrzała czarna porzeczka panoszą się w otwarciu, ledwo dopuszczając do głosu cytrusy. Te szepczą tak cicho, że trzeba przyłożyć nos do nadgarstka, by je usłyszeć.*
 (<http://pachnacehistorie.pl/2017/03/16/giorgio-armani-si-edt/>)
 'A sweet, juicy pear and a ripe blackcurrant run rampant in the opening, barely allowing citruses to speak. They whisper so quietly that one has to press its nose to a wrist to hear them.'
- (17) *Jarkie apel'sinovyje cvety podderzhivajut ritmichnuju citrusovuju vibraciju Dior «Pur Puazon», delaja sladkoe «serdce» bolee glubokim.*
 (<http://www.parfum.only-u.com.ua/christian-dior-parfum/61-pure-poison-christian-dior.html>)
 'Vibrant peachy colors keep rhythmical citrus vibration of Dior "Pure Poison" going on, making the sweet "heart" deeper.'
- (18) *Toutefois les compositeurs de chef d'œuvre parfumé ajoutèrent à ces délicatesses une note tout particulière pour la maison Cerruti: la note fleur de lin.*
 (<http://www.olfastory.com/parfum/cerruti-1881-pour-femme/composition/>)
 'The composers of the olfactory masterpiece have however added to this delicacy a note that is distinctive to the Cerruti house: the flax flower.'

3.7 Cross-linguistic variation in perfumery discourse

Despite certain similarities observed in the perfumery discourse, there are also some differences. According to Kövecses (2007), metaphors can vary in the cross-cultural and the within-culture dimension (related to social, regional, style, sub-cultural, and individual differences). Cross-cultural variations embrace *congruence* (a more general metaphor schema is filled out with a specific cultural content) and *alternative metaphors* (differing in the range of source domains). In the perfumery discourse, we have observed the following metaphoric components involved in variations: preference for some perceptual source frames, the absence of some non-perceptual source frames, variants of more general metaphorical schemata (e.g., personification), and variations in metaphoric expression.

All the languages exhibit the same basic conceptualizations with the perceptual source frames (e.g., SMELLING IS HEARING), but they differ with respect to the frequency of metaphors in the given language. The Russian reviews abound in

metaphors with the HEARING source frame while the English and French reviews contain more metaphors with the TOUCH source frame (see Figure 3 and Table 2).

The usage of non-perceptual source frames also varies depending on the language. The SOCIETY and ANIMAL frames were never used in Russian, the VEHICLE frame was only activated in English and French, and the BODY OF WATER frame was never used in English.

The example of different realizations of a more general metaphorical schema is personification. Although it is quite common in perfumery discourse, it differs with respect to the 'sex' of personified perfumes. French authors often conceptualize perfumes as men, cf. (19):

- (19) *Et aujourd'hui, j'ai eu envie de Te le présenter,*
 and Today feel like-1SG.PAST of you-PRO.2SG he-PRO.3SG.M present-INF
de Te Parler de lui. Mon
 of you-PRO.2SG speak-INF of he-PRO.3SG.M my-PRO.NOM.SG.M
inséparable Si de Giorgio Armani.
 inseparable- NOM.SG.M Si by Giorgio Armani
 'And today, I want to present him to you, talk to you about him (...) My inseparable Si by Giorgio Armani.'
 (<https://ladebrouillarde.com/mon-parfum-prefere-le-si-de-giorgio-armani>)

In English, perfumes tend to be personified as women – in (20) the perfume *La Vie Est Belle* is described as a classy lady (not a femme fatale or teenager).

- (20) *La Vie Est Belle smiles happily and she's eager to make you laugh as well. She's not a femme fatale that requires a long courtship and loads of patience, but she's not a teenager snapping bubblegum in your face.*
 (<https://boisdejasmin.com/2012/08/lancome-la-vie-est-belle-perfume-review.html>)

However, in both Polish and Russian, there is no consistent construal of the perfumes' 'sex'; male, female, or even neutral forms are employed. In the Polish Example (21), *Coco Mademoiselle* perfume is portrayed as a young girl, and in (22) *La Nuit Trésor* is referred to by masculine forms.

- (21) "*Panienka Coco jest rozważna i romantyczna... i miss-NOM.SG.F Coco be-3SG prudent-NOM.SG.F and romantic-NOM.SG.F and trochę zawiądzka.*"
 a bit cheeky-NOM.SG.F
 'Miss Coco is prudent and romantic, and a bit cheeky.'
 (<http://pachnacehistorie.pl/2017/04/08/chanel-coco-mademoiselle/>)

- (22) “*Mroczny*” *Tresor mógłby być bardziej podpalany,*
 dark-NOM.SG.M Tresor could-3SG.M be-INF more torched-NOM.SG.M
dymny, balsamiczny, bardziej złożony.
 smoky-NOM.SG.M balsamic-NOM.SG.M more complex-NOM.SG.M
 ‘Dark Trésor could be more torched, smoky, balsamic, and more **complex**.’
 (<http://zapachnidlo.blogspot.com/2016/11/lancome-la-nuit-tresor.html>)

In Russian examples, the author describes *La Vie Est Belle* as a woman in (23) while *Si* is referred to as a male in (24).

- (23) *pered nami znakomka La Vi odnako i ona*
 in front we-DAT acquaintance-NOM.SG.F La View yet also she-NOM.SG.F
izmenilas’
 change-3SG.F
 ‘There’s our acquaintance La View before us, yet also she has changed.’
 (<http://beauty4fem.blogspot.com/2017/11/lancome-la-vie-est-belle-eclat.html>)
- (24) *Giorgio Armani Si “d’javal”, kotoryj rabotaet na menja*
 Giorgio Armani Si devil-NOM.SG.M who-NOM.SG.M work-3.SG ON I-LOC
 ‘Giorgio Armani Si – a devil who works on me.’
 (<https://kosmetista.ru/blog/perfumes/54568.html>)

In our opinion, the differences in this aspect of the perfumes’ personification result from both cultural and linguistic factors (i.e. grammatical gender of the nouns denoting perfumes). Perfumes are considered to be predominantly a product for women (Classen, Howes, & Synnot, 2003), and in most commercials models or famous actresses appear e.g., Julia Roberts (*La Vie est Belle*), Cate Blanchett (*Si*), Keira Knightley (*Coco Mademoiselle*). Shifts of this prototype conceptualization in Polish, Russian, and French can be explained by the grammatical gender of nouns denoting perfume. The Polish lexeme *perfumy* (perfume) and the Russian word *duhi* (perfume) appear only in the plural form, yet the Polish word requires non-masculine gender forms of subordinate phrases (there is no such opposition in Russian). In French, the word *le parfum* is masculine (while *la fragrance* is feminine). Both Russian and Polish synonyms *parfum* (perfume) and *zapach* (1. smell, 2. perfume) are also masculine. Some studies suggest that grammatical gender can affect meaning representation (Boroditsky, Schmidt, & Phillips, 2003; Martinez & Shatz, 1996; Rączaszek-Leonardi, 2011; Sera, Berge, del Castillo-Pintado, 1994; Vigliocco, Vinson, Paganelli, & Dworzynski, 2005).

There are also some interesting language-specific features in the analyzed reviews. For example, a preference for a particular perfumery term was observed. In Polish blogs, the initial scent of perfumes is called *głowa* ‘head’ (PERSON frame)

while in English and Russian *top note* and *vershina* ‘peak’ (SPACE frame) are used. An emanation of perfume is called *ogon* ‘tail’ (ANIMAL frame) in Polish, in English and French *sillage*,⁸ and in Russian it is *shlejf* ‘train’ (CLOTHES frame). Arguably, such preferences can result in differences related to frame activation. In Polish, authors readily use animal metaphors while in Russian, clothes metaphors are preferred.

The most surprising phenomenon we encountered in our mini-corpora was the divergence in the use of typical and mixed metaphors in the languages analyzed. We suppose that the preference for particular types of metaphorical expression might be affected by the stylistic norms taught at school. It can hardly be explained by the language system only. Mixed metaphors notably prevail in the Polish and Russian texts, while they are only scarcely represented in English and French (see Figure 2 and Table 1). The reason for this may be that traditional English and French handbooks in stylistics reproach mixing one’s metaphors and point out the incoherence of such multi-frame metaphorical expressions (e.g., mixed metaphor is called “a slip” by Simpson, 2004, p.93). It is noteworthy that neither Polish nor Russian normative stylistics reference books have even coined a specific name for this phenomenon (e.g., Golub, 2010; Kurkowska & Skorupka, 1959; Kozhina, Duskaeva, & Salimovsky, 2008; Zdunkiewicz-Jedynak, 2010).

4. Conclusion

The analysis of perfume reviews in four languages, namely Polish, English, Russian, and French, has demonstrated many similarities, yet also some significant differences.

Firstly, the perfumery discourse, regardless of the language, is characterized by a great condensation of verbal metaphors. Although the target frame pertains to physical perception (SMELL), perfumery discourse regularly employs as source frames not only other less subjective senses (VISION, HEARING, TOUCH) but also non-perceptual frames, mostly the PERSON frame. Perfume reviewers prefer to elaborate on the terms which are lexicalized metaphors and often create story-like descriptions. The high frequency of mixed metaphors can be explained by the multi-dimensional character of the olfactory sensation that develops over time. The main difference between the languages analyzed lies in alternative conceptualization (Kövecses, 2005, 2007) – i.e., perfumes personified as a man or a woman

8. The term originates from French and is used as a loanword in English. In its basic meaning in French it refers to ‘the trail left by a vessel on the surface of water’; hence, it is subsumed under the VEHICLE frame; see Rey-Debove & Rey, 2000.

(which can be explained by the ambivalence of grammatical gender) – and the differing scope of source frame usage.

The question of the degree of subjectivity in the metaphor identification process may be regarded as one of the limitations of the study. We attempted to overcome it by applying a clearly defined step-by-step annotation guide. The results of the annotators' inter-agreement tests prove that the analysis can be deemed relatively consistent. However, in order to achieve an even higher degree of reliability, a larger sample of texts should be considered, and other thematic fields (e.g., music album reviews, art blogs) might be included to verify the observations concerning the preference for particular metaphor types and frame activation patterns across the analyzed languages.

Funding

This work was supported by the National Science Centre in Poland under project no. 2014/15/B/HS2/00182 (*Microcorpus of Synesthetic Metaphors. Towards a Formal Description and Efficient Methods of Analysis of Metaphors in Discourse*).

References

- Barkat-Defradas, M., & Motte-Florac, E. (Eds.). (2016). *Words for odours: Language skills and cultural insights*. Newcastle: Cambridge Scholars Publishing.
- Boroditsky, L., Schmidt, L.A., & Phillips, W. (2003). Sex, syntax, and semantics. In D. Gentner & S. Goldin-Meadow (Eds.), *Language in the mind: Advances in the study of language and thought* (pp. 61–79). Cambridge, MA: MIT Press.
- Cain, W.S. (2012). History of research on smell. In E.C. Carterette & M.P. Friedman (Eds.), *Handbook of perception. Volume VIa: Tasting and smelling* (pp. 197–229). Cambridge, MA: Academic Press.
- Chastrette, M. (2002). Classification of odors and structure–odor relationships. In C. Rouby, B. Schaal, D. Dubois, R. Gervais, & A. Holley (Eds.), *Olfaction, taste, and cognition* (pp. 110–116). Cambridge, UK: Cambridge University Press.
<https://doi.org/10.1017/CBO9780511546389.012>
- Classen, C., Howes, D., & Synnott, A. (2003). *Aroma: The cultural history of smell*. First published 1994 by Routledge, London; this edition published in Taylor & Francis e-Library.
- Crisp, P. (2008). Between extended metaphor and allegory: Is blending enough? *Language and Literature*, 17(4), 291–308. <https://doi.org/10.1177/0963947008095960>
- Dancygier, B., & Sweetser, E. (2014). *Figurative language. Cambridge textbooks in linguistics*. Cambridge, UK: Cambridge University Press.
- Dodge, E.K. (2018). A deep semantic corpus-based approach to metaphor analysis. In M.R.L. Petruck (Ed.) *MetaNet* (pp. 127–165). Amsterdam: John Benjamins.

- Fillmore, C. J. (1982). Frame semantics. In *The Linguistics Society of Korea* (Eds.), *Linguistics in the morning calm* (pp. 111–137). Seoul: Hanshin Publishing Co.
- Fillmore, C. J. (1985). Frames and the semantics of understanding. *Quaderni di Semantica*, 6(2), 222–254.
- Gibbs, R. W. (2016). *Mixing metaphor*. Amsterdam: John Benjamins.
<https://doi.org/10.1075/milcc.6>
- Gibbs, R. W. (2017). *Metaphor wars. Conceptual metaphors in human life*. Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/9781107762350>
- Gibbs, R. W., & Cameron, L. (2008). The social-cognitive dynamics of metaphor performance. *Cognitive Systems Research*, 9(1–2), 64–75. <https://doi.org/10.1016/j.cogsys.2007.06.008>
- Golub, I. B. (2010). *Stilistika russkogo jazyka*. Moscow: Ajris Press.
- Holz, P. (2007). Cognition, olfaction and linguistic creativity. Linguistic synesthesia as poetic device in cologne advertising. In M. Plümacher & P. Holz (Eds.), *Speaking of colors and odors* (pp. 185–202). Amsterdam: John Benjamins. <https://doi.org/10.1075/ceclr.8.11hol>
- Howes, D. (2002). Nose-wise: Olfactory metaphors in mind. In C. Rouby, B. Schaal, D. Dubois, R. Gervais, & A. Holley (Eds.), *Olfaction, taste, and cognition* (pp. 67–81). Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/CBO9780511546389.010>
- Hudson, R., & Distel, H. (2002). The individuality of odor perception. In C. Rouby, B. Schaal, D. Dubois, R. Gervais, & A. Holley (Eds.), *Olfaction, taste, and cognition*. (pp. 408–420). Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/CBO9780511546389.034>
- Kimmel, M. (2010). Why we mix metaphors (and mix them well): Discourse coherence, conceptual metaphor, and beyond. *Journal of Pragmatics*, 42(1), 97–115.
<https://doi.org/10.1016/j.pragma.2009.05.017>
- Knudsen, S. (2003). Scientific metaphors going public. *Journal of Pragmatics*, 35(8), 1247–1263.
[https://doi.org/10.1016/S0378-2166\(02\)00187-X](https://doi.org/10.1016/S0378-2166(02)00187-X)
- Koller, V. (2004). Businesswoman and war metaphors: ‘Possessive, jealous and pugnacious?’ *Journal of Sociolinguistics*, 8(1), 3–22. <https://doi.org/10.1111/j.1467-9841.2004.00249.x>
- Köster, E. (2002). The specific characteristics of the sense of smell. In C. Rouby, B. Schaal, D. Dubois, R. Gervais, & A. Holley (Eds.), *Olfaction, taste, and cognition*. (pp. 27–43). Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/CBO9780511546389.007>
- Kövecses, Z. (2005). *Metaphor in culture: Universality and variation*. Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/CBO9780511614408>
- Kövecses, Z. (2007). Variation in metaphor. *Iha do Desterro. A Journal of English Language, Literatures in English and Cultural Studies*, 53, 13–40.
- Kövecses, Z. (2016). A view of “mixed metaphors” within a conceptual metaphor theory framework. In R. W. Gibbs (Ed.), *Mixing metaphor* (pp. 1–16). Amsterdam: John Benjamins. <https://doi.org/10.1075/milcc.6.01kov>
- Kozhina, M. N., Duskaeva, L. R., & Salimovsky, V. A. (2008). *Stilistika russkogo jazyka*. Moscow: Flinta-Nauka.
- Kurkowska, H., & Skorupka, S. (1959). *Stylistyka polska: zarys*. Warsaw: Państwowe Wydawnictwo Naukowe.
- Lakoff, G., & Johnson, M. (2008 [1980]). *Metaphors we live by*. Chicago, IL: University of Chicago Press.
- Lakoff, G. (2014). Mapping the brain’s metaphor circuitry: metaphorical thought in everyday reason. *Frontiers in human neuroscience*, 8, 958, 1–14.

- Le Guérer, A. (2002). Olfaction and cognition: A philosophical and psychoanalytic view. In C. Rouby, B. Schaal, D. Dubois, R. Gervais, & A. Holley (Eds.), *Olfaction, taste, and cognition* (pp. 3–15). Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/CBO9780511546389.005>
- Marhula, J., & Rosiński, M. (2017). Co oferuje MIPVU jako metoda identyfikacji metafory? *Polonica*, 37, 23–36. <https://doi.org/10.17651/POLON.37.10>
- Martinez, I. M., & Shatz, M. (1996). Linguistic influences on categorization in preschool children: A crosslinguistic study. *Journal of Child Language*, 23, 529–545. <https://doi.org/10.1017/S030500090000893X>
- Moore, K. E. (2011). Ego-perspective and field-based frames of reference: Temporal meanings of FRONT in Japanese, Wolof, and Aymara. *Journal of Pragmatics*, 43(3), 759–776. <https://doi.org/10.1016/j.pragma.2010.07.003>
- Müller, C. (2016). Why mixed metaphors make sense. In Gibbs, R. W. (Ed.), *Mixing metaphor* (pp. 31–56). Amsterdam: John Benjamins.
- Müller, C. (2017). Waking metaphors: Embodied cognition in multimodal discourse. In B. Hempe (Ed.), *Metaphor. Embodied cognition and discourse* (pp. 297–316). Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/9781108182324.017>
- Petersen, W., Fleischhauer, J., Bücken, P., & Beseoglu, H. (2008). A frame-based analysis of synaesthetic metaphors. *The Baltic International Yearbook of Cognition, Logic and Communication*, 3(1), 1–22.
- Ragglejaz Group. (2007). MIP: A method for identifying metaphorically used words in discourse. *Metaphor and Symbol*, 22(1), 1–39. <https://doi.org/10.1080/10926480709336752>
- Rączaszek-Leonardi, J. (2011). *Zjednoczeni w mowie: Względność językowa w ujęciu dynamicznym*. Warsaw: Scholar.
- R Core Team. (2016). *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing. Retrieved from: <https://www.R-project.org/>
- Rey-Debove, J., & Rey, A. (2000). *Le nouveau petit Robert: Dictionnaire alphabétique et analogique de la langue française*. Paris: Dictionnaires Le Robert.
- Ritchie, L. D. (2017). *Metaphorical stories in discourse*. Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/9781316717172>
- Ruppenhofer, J., Ellsworth, M., Petruck, M. R. L., Johnson, Ch. R., Baker, C. F., & Scheffczyk, J. (2016). *FrameNet II: Extended theory and practice*. Retrieved from: <https://framenet2.icsi.berkeley.edu/docs/r1.7/book.pdf>
- Semino, E. (2008). *Metaphor in discourse*. Cambridge, UK: Cambridge University Press.
- Sera, M., Berge, C., & del Castillo-Pintado, J. (1994). Grammatical and conceptual forces in the attribution of gender by English and Spanish speakers. *Cognitive Development*, 9, 261–292. [https://doi.org/10.1016/0885-2014\(94\)90007-8](https://doi.org/10.1016/0885-2014(94)90007-8)
- Simpson, P. (2004). *Stylistics: A resource book for students*. London: Routledge. <https://doi.org/10.4324/9780203496589>
- Snævarr, S. (2010). *Metaphors, narratives, emotions: Their interplay and impact*. Amsterdam: Rodopi. <https://doi.org/10.1163/9789042027800>
- Steen, G. (2015). Developing, testing and interpreting deliberate metaphor theory. *Journal of Pragmatics*, 90, 67–72. <https://doi.org/10.1016/j.pragma.2015.03.013>
- Steen, G. J., Dorst, A. G., Herrmann, J. B., Kaal, A., Krennmayr, T., & Pasma, T. (2010). *A method for linguistic metaphor identification. From MIP to MIPVU*. Amsterdam: John Benjamins. <https://doi.org/10.1075/celcr.14>

- Stickles, E., David, O., Dodge, E. K., & Hong, J. (2016a). Formalizing contemporary conceptual metaphor theory. *Constructions and frames*, 8(2), 166–213. <https://doi.org/10.1075/cf.8.2.03sti>
- Stickles, E., David, O., & Sweetser, E. (2016b). Grammatical constructions, frame structure, and metonymy: Their contributions to metaphor computation. In A. Healey, R. N. de Souza, P. Peškov, & M. Allen (Eds.), *Proceedings of the 11th meeting of the High Desert Linguistics Society* (pp. 317–345). Albuquerque, NM: High Desert Linguistics Society.
- Sullivan, K. (2006). Frame-based constraints on lexical choice in metaphor. *Annual Meeting of the Berkeley Linguistics Society*, 32(1), 387–399. <https://doi.org/10.3765/bls.v32i1.3476>
- Sullivan, K. (2013). *Frames and constructions in metaphoric language*. Amsterdam: John Benjamins. <https://doi.org/10.1075/cal.14>
- Sullivan, K. (2019). *Mixed metaphors. Their use and abuse*. London: Bloomsbury. <https://doi.org/10.5040/9781350066076>
- Velasco-Sacristán, M., & Fuertes-Olivera, P.A. (2006). Olfactory and olfactory-mixed metaphors in print ads of perfume. *Annual Review of Cognitive Linguistics*, 4(1), 217–252. <https://doi.org/10.1075/arcl.4.09vel>
- Vigliocco, G., Vinson, D. P., Paganelli, F., & Dworzynski, K. (2005). Grammatical gender effects on cognition: Implications for language learning and language use. *Journal of Experimental Psychology: General*, 134, 501–520. <https://doi.org/10.1037/0096-3445.134.4.501>
- Werning, M., Fleischhauer, J., & Beseoglu, H. (2006). The cognitive accessibility of synaesthetic metaphors. In R. Sun & N. Miyake (Eds.), *Proceedings of the twenty eighth annual conference of the Cognitive Science Society* (pp. 2365–70). London: Lawrence Erlbaum Associates.
- Werth, P. (1994). Extended metaphor – A text-world account. *Language and Literature*, 3(2), 79–103. <https://doi.org/10.1177/096394709400300201>
- White, R.M. (1996). *The structure of metaphor. The way the language of metaphor works*. Oxford: Blackwell.
- Winter, B. (2016). The sensory structure of the English lexicon. Doctoral dissertation, University of California, Merced.
- Winter, B. (2019). *Sensory linguistics: Language, perception and metaphor*. Amsterdam: John Benjamins. <https://doi.org/10.1075/celcr.20>
- Zawisławska, M. (2019). *Metaphor and senses: The Synamet Corpus: A Polish resource for synesthetic metaphors*. Berlin: Peter Lang.
- Zdunkiewicz-Jedynak, D. (2010). *Wykłady ze stylistyki*. Warsaw: Wydawnictwo Naukowe PWN.
- Ziem, A. (2014). *Frames of understanding in text and discourse: Theoretical foundations and descriptive applications*. Amsterdam: John Benjamins. <https://doi.org/10.1075/hcp.48>

Appendix

Texts from blogs were excerpted in January 2019. All the reviewed perfumes are fragrances for women. The lists of blogs with detailed information (blog title, author, website and information about the status of the blog as of September 2019) are presented in Tables 4, 5, 6, and 7.

Table 4. List of Polish blogs

Perfume	Number of metaphorical expressions	Blog	Author	Internet address	Additional information
<i>Pure Poison</i>	19	<i>Edpholiczka</i>	Kasia	http://edpholiczka.pl/2015/07/dior-pure-poison.html	
<i>La Vie Est Belle</i>	29	<i>Zapachnidło</i>	Domimika	http://zapachnidlo.blogspot.com/2017/01/lancome-la-vie-est-belle.html	
<i>Si</i>	34	<i>Pachnqce historie</i>	Magdalena	http://pachnacehistorie.pl/2017/03/16/giorgio-armani-si-edt/	
<i>Black Opium</i>	20	<i>Edpholiczka</i>	Kasia	https://edpholiczka.pl/2015/02/yves-saint-laurent-black-opiu.html	
<i>Chloe</i>	17	<i>Perfumoholiczka</i>	Anonymous	http://perfumoholiczka.blogspot.com/2015/06/chloe-edp.html	The blog has been deleted.
<i>Coco Mademoiselle</i>	24	<i>Pachnqce historie</i>	Magdalena	http://pachnacehistorie.pl/2017/04/08/chanel-coco-mademoiselle/	
<i>La Nuit Trécor</i>	21	<i>Zapachnidło</i>	Domimika	http://zapachnidlo.blogspot.com/2016/11/lancome-la-nuit-tresor.html	
<i>Gabrielle</i>	10	<i>Agata ma nosa</i>	Agata Herbut	http://agatamanosa.blogspot.com/2017/09/perfumy-chanel-gabrielle.html	
<i>La Petite Robe Noire</i>	11	<i>Elmino</i>	Anonymous	https://blog.elmino-parfum.pl/2015/09/16/guerlain-la-petite-robe-noir-recenzja-perfum/	The address of the blog has been changed.
<i>Cerruti 1881</i>	15	<i>Ibeauty.pl</i>	Ania	https://blog.ibeauty.pl/?p=790	

Table 5. List of English blogs

Perfume	Number of metaphorical expressions	Blog	Author	Internet address	Additional information
<i>Pure Poison</i>	27	<i>Now smell this</i>	Robin	http://www.nstperfume.com/2006/05/19/the-christian-dior-poisons-part-3-pure-poison/	
<i>La Vie Est Belle</i>	17	<i>Bois de Jasmin</i>	Victoria	https://boisdejasmin.com/2012/08/lancome-la-vie-est-belle-perfume-review.html	
<i>Si</i>	25	<i>Perfume Shrine</i>	Elena Vosnaki	http://perfumeshrine.blogspot.com/2013/09/giorgio-armani-si-fragrance-review.html	
<i>Black Opium</i>	18	<i>The Candy Perfume Boy</i>	Thomas Duncleley	https://thecandyperfumeboy.com/2014/10/03/how-the-mighty-have-fallen-ysl-black-opium-perfume-review/	
<i>Chloe</i>	17	<i>Diary of a Perfume Addict</i>	Kelly	http://diaryofperfumeaddict.blogspot.com/2013/04/chloe-edp-by-chloe.html	
<i>Coco Mademoiselle</i>	10	<i>Lauren's Little Blogs</i>	Lauren	http://laurenslittleblogs.blogspot.com/2015/02/review-chanel-coco-mademoiselle.html	The blog's settings have been changed to private.
<i>La Nuit Trésor</i>	25	<i>The Happy Sloths</i>	Jasmine	http://www.thehappysloths.com/2015/05/lancome-la-nuit-tresor-leau-de-parfum-review.html	
<i>Gabrielle</i>	29	<i>Bois de Jasmin</i>	Victoria	https://boisdejasmin.com/2017/09/chanel-gabrielle-perfume-review.html	
<i>La Petite Robe Noire</i>	51	<i>The Perfume Expert</i>	Lee-Ann	http://www.theperfumexpert.com/guerlain-la-petite-robe-noire-review/	
<i>Cerruti 1881</i>	5	<i>Lipsticks and Biscuits</i>	Amy	https://lipsticksandbiscuits.wordpress.com/2014/10/27/cerruti-1881-my-signature-scent/	The blog has been deleted.

Table 6. List of Russian blogs

Perfume	Number of metaphorical expressions	Blog	Author	Internet address	Additional information
<i>Pure Poison</i>	7	Anonymous	Anonymous	http://www.parfum.only-u.com.ua/christian-dior-parfum/61-pure-poison-christian-dior.html	The blog has been deleted.
<i>La Vie Est Belle</i>	18	<i>Krasota – dobraja sila</i>	Victoria	http://beauty4fem.blogspot.com/2017/11/lancome-la-vie-est-belle-eclat.html	
<i>Si</i>	26	<i>Kosmetista</i>	Bride Wolf	https://kosmetista.ru/blog/perfumes/54568.html	
<i>Black Opium</i>	26	<i>Krasota – dobraja sila</i>	Victoria	https://beauty4fem.blogspot.com/2017/09/black-opium-floral-shock-yves-saint-laurent.html	
<i>Chloe</i>	19	<i>Tanserb's blog</i>	Tat'jana	http://tansefb.blogspot.com/2017/05/chloe-eau-de-parfum-review.html	
<i>Coco Mademoiselle</i>	28	<i>Parfum one</i>	Anonymous	https://parfum.one/blog/chanel-coco-mademoiselle	
<i>La Nuit Trécor</i>	12	<i>Beauty Annie</i>	AnnieNW	https://annie.kosmetista.ru/blog/88793.html	
<i>Gabrielle</i>	7	<i>Parfumistika</i>	Parfumistika	http://www.parfumistika.kosmetista.ru/blog/84540.html	
<i>La Petite Robe Noire</i>	10	<i>Anasty's blog</i>	Anasty	https://anasty.kosmetista.ru/blog/80240.html	
<i>Cerruti 1881</i>	6	<i>Aroma blog</i>	Anonymous	https://www.aromablog.ru/2009/08/cerruti-1881-pour-femme/	The blog has been deleted.

Table 7. List of French blogs

Perfume	Number of metaphorical expressions	Blog	Author	Internet address	Additional information
<i>Pure Poison</i>	27	<i>Le blog de Papillon des Senteurs</i>	Anonymous	http://papillondessenteurs.over-blog.com/article-pure-poison-de-dior-des-sensations-pures-70773156.html	
<i>La Vie Est Belle</i>	17	<i>Grain de Musc</i>	Perfume Lover	http://graindemusc.blogspot.com/2012/08/la-vie-est-belle-en-rose-ou-lancome.html	
<i>Si</i>	20	<i>La Débrouillardade</i>	Angie La Débrouillardade	https://ladebrouillardade.com/mon-parfum-prefere-le-si-de-giorgio-armani/	
<i>Black Opium</i>	30	<i>Les Sense de Capucine</i>	Capucine	https://www.lessensdecapucine.com/mon-dernier-coup-coeur-olfactif-black-opium-yves-saint-laurent/	
<i>Chloe</i>	10	<i>Le Cahier</i>	Camille Dg	https://lecahier.com/critique-parfum-see-by-chloe/	
<i>Coco Mademoiselle</i>	22	<i>Le Nez Bavard</i>	Juliette Falu	https://www.lenezbavard.com/2008/06/23/chanel-coco-mademoiselle/	
<i>La Nuit Trésor</i>	17	<i>Cherry Blossom</i>	Anne-Céline	http://cherryblossom.eklablog.com/la-nuit-tresor-de-lancome-a115045026	
<i>Gabrielle</i>	6	<i>Mademoiselle Stef</i>	Mademoiselle Stef	http://www.mademoisellestef.com/parfum-gabrielle-chanel/	
<i>La Petite Robe Noire</i>	16	<i>Ally Fantaisies</i>	Allison	http://allyfantaisies.com/la-petite-robe-noire-eau-de-parfum-guerlain/	
<i>Cerruti 1881</i>	30	<i>Olfactory</i>	Anonymous	https://www.olfactory.com/parfum/cerruti-1881-pour-femme/composition/	

The analysis of the perceptual frames' activation in Polish blogs ($\chi^2=65.503$, $df=36$, $p\text{-value}<0.001$, Cramer's $V=0.29$) showed that only two perfume reviews differ in a statistically significant way from the others – in the *Si* review there are fewer metaphors with the TASTE target frame, and in the *Cerutti 1881* review there are more metaphorical expressions employing the HEARING target frame.

There were no statistically significant inter-author differences in the English blogs ($\chi^2=43.464$, $df=36$, $p\text{-value}=0.18$). In the Russian blogs ($\chi^2=54.414$, $df=36$, $p\text{-value}<0.01$), *Coco Mademoiselle* (more metaphors with the MULTIMODAL PERCEPTION frame) and *Cerutti 1881* (more metaphors with the VISION frame) stood out.

In the French blogs ($\chi^2=69.168$, $df=36$, $p\text{-value}<0.0001$), the *Si* review depicted more metaphors with the TOUCH target frame, and the *Coco Mademoiselle* review had more metaphors with the MULTIMODAL PERCEPTION target frame.

No results of metaphor type (typical, mixed, and narrative) analysis in any of the blogs were statistically significant ($p\text{-value}>0.05$).

Address for correspondence

Magdalena Zawisławska
Institute of Polish Language
University of Warsaw
Krakowskie Przedmieście 26/28
00-927 Warszawa
Poland
zawisla@uw.edu.pl

Biographical notes

Magdalena Zawisławska, Ph.D., is an Assistant Professor at the University of Warsaw. Her main research interests are metaphor, semantics, and cognitive linguistics. She was an investigator on semantic projects: Polish WordNet and Polish FrameNet. She also was the principal investigator on SYNAMET.

Marta Falkowska, Ph.D., is an Assistant Professor at the University of Warsaw. She specializes in lexical semantics and cognitive grammar. She was a co-investigator on SYNAMET.

Copyright of *Metaphor & the Social World* is the property of John Benjamins Publishing Co. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.