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COGNITIVE MODELS OF THE CONCEPTUAL OPPOSITION “WARMTH — COLDNESS” ON THE BASIS OF SYNESTHESIA OF COLOUR AND EMOTION IN D.H. LAWRENCE’S NOVEL “SONS AND LOVERS”

SUMMARY. This article discusses the concept of synesthesia in terms of stylistics and cognitive linguistics. While analyzing examples of synesthesia in David Herbert Lawrence’s novel “Sons and Lovers”, the author of the article reveals synesthetic complexes expressed in the form of the conceptual opposition “warmth-coldness”. Each component of the opposition is broken down into the triad “colour-sensation-emotion” forming the conceptual blend of colours, warm or cold sensations and positive or negative feelings/emotions, which helps to interpret the role of synesthesia in understanding the nature of the main characters of D.H. Lawrence’s novel. Cognitive modelling of the conceptual opposition “warmth-coldness” is conducted with the help of the method of conceptual integration (conceptual blending), suggested by Gilles Fauconnier and Mark Turner, according to which elements of different mental spaces are mixed, resulting in blending in the human subconsciousness. The results obtained by applying the method of conceptual integration are compared with the results obtained from the implementation of the technique of conceptual interpretation, which includes the basic conceptual, associative and emotive-evaluative layers analysis (according to the views of I.A. Tarasova, I.A. Sternin and Z.D. Popova). In the end, a conclusion is made about symbolism of the colour scheme and the role of the opposition of warm and cold colours in D.H. Lawrence’s text, which is a key to understanding the emotional state of the main characters of the novel.

KEY WORDS. Concept, conceptual opposition, synesthesia, cognitive modelling, conceptual integration.

Synesthesia (also spelled **synæsthesia** or **synaesthesia**, plural **synesthesiæ** or **synæsthesiæ**), from the ancient Greek σύν (syn), “together,” and αἴσθησις (aisthēsis), “sensation”, is a neurological condition in which stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in a second sensory or cognitive pathway. In linguistics this connection between sensory pathways is fixed in a number of phrases such as “a brilliant sound”, “a warm colour”; in poetics synaesthesia is realized in figures of speech and tropes based on intersensory interaction; in musicology synaesthesia is represented in visual images connected with the perception of sounds (such images are produced, for example, in perception of the works of Claude Debussy, Nikolay Rimsky-Korsakov, Alexander Scriabin, Olivier Messiaen).

In a broader sense, synesthesia sometimes refers to the interaction of visual and auditory arts, and thus it presupposes the existence of the following kinds of synaesthetic genres and types: programme music, light organ music, the art of Wassily Wassilyevich Kandinsky and Mikalojus Čiurlionis. In the epistemological sense, synesthesia reflects the integrity of the properties of reality. Ability in synesthesia refers to manifestations of “essential powers” of man, cultivated in his social practices, particularly in the arts. Synesthesia is considered an integral component of artistic (figurative, non-verbal) thinking, and is involved in the formation of imagery in the process of mutual influence and synthesis of the arts [1; 447].

Over the past two decades have appeared a number of publications on synesthesia, in particular the phenomenon of synaesthesia in linguistics (Galeev 1999, Zhitkov 1999, Agalakova 2000, Levchin 2003, Ballard 2002, Day 1996, Caltvedt 1999 and others) [2; 3].

Researchers working on linguistic synesthesia define the scope of this concept in at least two ways: 1) Synaesthesia in the narrow sense (Ullmann 1957, Dombi 1971, Kapanova 1984, Kundik 1997) is the interaction of words related to different senses (warm colours, loud colours), 2) synesthesia in the broad sense (Stern 1931, Kronasser 1952, Nikitin 1974, Searle 1990, Gak 1977, Voronin 1983) deals with sense perception and the attraction of words denoting emotions or any other specific or abstract concept (for instance, cold feelings, sour mood). S.V. Voronin suggests the term “synesthemia” for the synesthesia of senses and emotions (Voronin 1983) [2; 7].

In this paper we will focus on the concept of synesthesia which functions in both senses. Initially — linguistically — we will view synesthesia as an association of words related to different channels of perception (e.g., the interaction of tactile sensations and colours), and then trace the function of such complexes in excerpts from the novel by David Herbert Lawrence “Sons and Lovers” and attempt to connect examples of synesthesia with the emotional state of the characters. The passages under analysis (Chapter 7, “Lad-and-girl love” and Chapter 9 “Defeat of Miriam”) tell a story of the development of relations between two young people — Paul and Miriam. In both chapters the action takes place in the lap of nature, which in many ways is the third character in the novel. Lawrence examines the inner world of the personages (Paul and Miriam), connecting the description of nature with the dynamics of the inner world of the characters. In Lawrence’s descriptions of nature one can also notice elements of hypotyposis and ekphrasis (*hypotyposis* is a vivid, picturesque description of scenes or events; *ekphrasis* is a description of a work of fine art or architecture in a literary text). Lawrence reveals himself as an artist, describing nature as if painting it using the techniques of Impressionism: the descriptions in the extracts are dynamic; one colour merges into another, mixes with feelings associated with colours and acquires additional emotive and evaluative connotations.

The colours used in the passage can be divided into warm (*red, crimson, yellow, black*) and cold (*blue, white, greyish-green, greenish*). In most instances, these colours are represented as synesthetic complexes: *yellow glow, chill blue, gold glowed, the sky was clean and cold, greenish with cold*.

The objective basis for the division of colours into warm and cold is not yet entirely clear. Until recently it was believed that the basis for this difference is the association with warm and cold objects of the world. For example, blue is perceived as a cold colour because it is inherent to the colour of the sky, ice, water, which evoke a sense of cold or coolness; red and yellow colours are perceived as warm, because they are inherent to such things as fire, sunlight. Recently, however, it was found that this division corresponds to actual temperature and colour quality. The orange-red part of the spectrum contains more thermal energy than blue-green. In addition, it was experimentally found that people in a positive emotional state are more sensitive to red and yellow, and in a negative state to blue and green [3]. Another interpretation is a more psychological one. According to it, the shortwave spectrum produces a soothing effect. The feeling of lethargy resembles the human condition in winter. The longwave spectrum, on the contrary, promotes activity that is similar to the state in summer (see *The Psychology of Colour*) [4].

In our case, while classifying the colours found in the text, we were guided by the following principles: 1) traditional theory of the division of colours into warm and cold, and 2) the principles of literary and linguistic analysis to show the artistic relationship between colour and emotion and the division of emotions and colours connected with them into warm and cold.

Thus, the dominant conceptual opposition in the text is the opposition “warmth — coldness”, which applies to colour perception and the emotional state of the characters.

The concept “warmth”

Generic space
Stimulus — Reaction Perception — Sensation/feeling

Input space 1. Warmth	Input space 2. Colour	Input space 3. Emotion
Physical warmth (temperature rise)	Warm colours (yellow, red, crimson, green)	Emotional warmth (kindness, love, passion)

Blended space
colour — high temperature — emotion
<p style="text-align: center;">a yellow glow, mowing-grass, and the sorrel-heads burned crimson. The gold in the west sank down to red, the red to crimson, But still some had burst, and their gold ruffled and glowed.</p> <p>Miriam went on her knees before one cluster, took a wild-looking daffodil between her hands, turned up its face of gold to her, and bowed down, caressing it with her mouth and cheeks and brow.</p>

Figure 1. Conceptual integration of the synesthetic complex
“colour — high temperature — emotion”

In order to present the cognitive model of the opposition “warmth — coldness”, we will apply the methodology of conceptual integration (conceptual blending), suggested by Gilles Fauconnier (Gilles Fauconnier) and Mark Turner (Mark Turner 1993, 1998) [5], according to which the elements of different mental spaces are mixed, resulting in blending in the human subconscious, which leads to the synesthesia of feelings, colours and emotions.

In Figure 1 there is *a generic space* where the basic principles of perception of reality (stimulus — reaction) are presented. Then it is transformed into three *input spaces* conventionally named: Space 1. *Warmth*, Space 2. *Colour*, Space 3. *Emotions*. In Lawrence’s text these mental spaces are mixed, resulting in the synesthesia of *warmth, colour, and emotions* which in language and culture are traditionally associated with warmth. This kind of synesthesia leads to a deeper understanding of Miriam’s feelings, as warm colours in the text are associated with her image:

Miriam went on her knees before one cluster, took a wild-looking daffodil between her hands, turned up its face of gold to her, and bowed down, caressing it with her mouth and cheeks and brow [6; 217-218].

Now let us carry out a conceptual analysis of each of the members of the opposition “warmth — coldness”, presenting concepts in a layered structure consisting of the three layers: basic conceptual, associative and emotive-evaluative (according to the views of I.A. Tarasova, I.A. Sternin and Z.D. Popova on the structure of the concept) [7, 8]. On the basis of dictionary and thesaurus entry analysis, the structure of the concept “warmth” can be constructed as follows.

The concept “warmth”

- **The basic conceptual layer (the nucleus)**

The state, sensation, or quality of producing or having a moderate degree of heat: an agreeable warmth in the house.

- **The associative layer**

The tactile feeling of warmth; the warmth of colours (warm glow); the glowing effect produced by using predominantly red or yellow hues.

- **The emotive-evaluative layer**

Warmth is love, passion, kindness, affection (a. Friendliness, kindness, or affection: human warmth. b. Excitement or intensity, as of love or passion; ardor) [<http://www.thefreedictionary.com/warmth>]

Judging by the results of the conceptual analysis, it is clear that G. Fauconnier and M. Turner’s mental spaces presented in Figure 1, correspond to the three layers of the concept: the basic conceptual layer corresponds to Space 1. *Warmth*, the associative layer — to Space 2. *Colour*, the emotive-evaluative layer — to Space 3. *Emotions*.

The concept “coldness” is modelled according to the same principles: first it is broken down into mental spaces which create conceptual blends forming the conceptual integration of the synaesthetic complex “colour — low temperature — emotion” (see Figure 2).

The concept “coldness”

Generic space
Stimulus — Reaction Perception — Sensation/feeling

Input space 1. Coldness	Input space 2. Colour	Input space 3. Emotion
Physical coldness (temperature fall)	Cold colours (blue, grey, greenish, white, pallid)	Emotional coldness (estrangement, indifference, nonchalance)

Blended space
colour — low temperature — emotion
<p>the chill blue crept up against the glow. He hesitated, wondering whether one whiteness were a strand of fog or only campion-flowers pallid in a cloud, The hills and the sky were clean and cold. Everything looked washed, rather hard. Miriam glanced at Paul. He was pale and impassive. Daffodils were craning forward from among their sheaves of grey-green blades. The cheeks of the flowers were greenish with cold</p>

*Figure 2. Conceptual integration of the synesthetic complex
“colour — low temperature — emotion”*

The concept “coldness” renders Paul’s inner world and his psychological state, as evidenced by the examples in the text:

The hills and the sky were clean and cold. Everything looked washed, rather hard. Miriam glanced at Paul. He was pale and impassive. Daffodils were craning forward from among their sheaves of grey-green blades. The cheeks of the flowers were greenish with cold [6; 217-218].

Then similarly let us carry out a conceptual analysis of the concept “coldness”, which can also be presented in a three-layer structure: the basic conceptual, associative and emotive-evaluative layers.

The concept “coldness”

• **The basic conceptual layer**

Having a low temperature below normal temperature, the absence of heat

1.

a. Having a low temperature.

b. Having a temperature lower than normal body temperature.

c. Feeling no warmth; uncomfortably chilled.

2.

- a. Marked by deficient heat: a cold room.
- b. Being at a temperature that is less than what is required: cold oatmeal.
- c. Chilled by refrigeration or ice: cold beer.

- **Associative layer**

The sensation of cold — cold colours (chill blue) — associative synesthesia
Designating a tone or colour, such as pale gray, that suggests little warmth.

- **The emotive-evaluative layer**

cold — is the lack of emotion, alienation, disaffection, indifference, lack of sexual desire

- a. Lacking emotion; objective: cold logic.
- b. Not affectionate or friendly; aloof: a cold person; a cold nod.
- c. Exhibiting or feeling no enthusiasm: a cold audience; a cold response to the new play; a concert that left me cold.
- d. Devoid of sexual desire; frigid.

Likewise, G. Fauconnier and M. Turner's mental spaces presented in Figure 2 correspond to the three layers of the concept: the basic conceptual layer corresponds to Space 1. *Coldness*, the associative layer — to Space 2. *Colour*, the emotive-evaluative layer — to Space 3. *Emotions*.

As with any opposition, the opposition "warmth-coldness" has the intersection area where the opposition is either neutralized or transformed, acquiring the elements of *cognitive inversion (or reframing)*^{*}. Of special interest in this passage is the intersection of the opposition "warmth — coldness". The opposition "warmth — coldness" remains unchanged in the physical sense, but the colours and the psychological state of the characters change.

As Paul and Miriam walk along the road at sunset, their conflicting feelings are transmitted through the synaesthetic oppositions of warm and cool colours. Then it gets dark, and the grey colour absorbs all other colours ("*the greying light robbed things of their colour*"). Then, the twilight turns into night, which leads to absolute neutralization of colours — they turn to the opposition of achromatic colours — black and white. In the text this opposition acquires additional associative, emotive and evaluative connotations. Now *white* (a cold colour) is associated with Miriam, as it is used in the descriptions of the heroine's feelings by means of such examples as: *there was a cool scent of ivory roses — a white, virgin scent* [6; 159-160]. The synesthetic combinations *cool scent* and *white virgin scent* convey the subjective perception of Miriam, for whom the rosebush is the embodiment of love as a high religious feeling divorced from passionate bodily love (see Figure 3).

^{*} In George Lakoff's understanding, the term is synonymous with the term "reconceptualization" and refers to inversion or replacement of elements (slots) of cognitive structures, subconsciously or consciously used by people while acquiring knowledge of reality, or modeling different processes.

The concept “cold”

Generic space
Stimulus — Reaction Perception — Sensation/feeling

Input space 1. Colour	Input space 2. Coldness	Input space 3. Emotion
Achromatic colour — white	Physical coldness (temperature fall)	Coldness connected with religious purity, virginity and piety

Blended space
Achromatic colour (white) — low temperature — emotion
holy white roses There was a cool scent of ivory roses—a white, virgin scent

Figure 3. Conceptual integration of the synesthetic complex
“achromatic colour — low temperature — emotion”

Paul’s feelings change from cold alienation to mental confusion which is accompanied by fever (*it was like a delicious delirium in his veins* [6; 159-160]). The method of componential analysis of the lexeme “delirium” reveals the link between the psychological state and the colour black. Confusion and black (dark colour) have a common base — the inability to see/understand clearly:

Delirium — nightmare — dimness — greyness — darkness — blackness [9].

The connection between Paul’s confusion, temperature rise and the colour black is shown in Figure 4.

The concept “warmth”

Generic space
Stimulus — Reaction Perception — Sensation/feeling

Input space 1. Colour	Input space 2. Warmth	Input space 3. Emotion
Achromatic colour — black	Physical warmth (temperature rise)	Mental confusion

Blended space
Achromatic colour (black) — warmth— mental confusion
a delicious delirium Something made him feel anxious and imprisoned

Figure 4. Conceptual integration of the synesthetic complex
“achromatic colour — high temperature — emotion”

Thus, the conceptual opposition “warmth — coldness” is a key concept in the understanding of the complex nature of Paul and Miriam’s relationship. Through the synesthesia of colour, physical perception and emotion, D.H. Lawrence paints a contradictory picture of the young people’s inner worlds. Paul is associated with the cold colours of the landscape, Miriam with warm colours. However, the psychological state of the characters changes over the course of the development of their relations and gradually transforms into the opposition of achromatic black and white colours. Later on in the text one can clearly trace the connection between Miriam’s feelings and white colours; Paul’s perception of feelings towards Miriam is connected with black.

In conclusion, let us give a summarized definition of synaesthesia. Synesthesia is a systemic mechanism, which is based on the emotional process of generalization, which appears on the semantic level as a unity of emotive and evaluative characteristics of objects of different modalities. It provides a link between perceptions of different modalities, allows invariant perception of objects, and reconstructs the complete image on the basis of only one modality. In the process of synesthesia, similar qualities of different sensory modalities are not felt, but there appears a subjective personal impression of similarity when different modalities are perceived simultaneously. As a result, the perception of an object is endowed with emotional meaning and symbolic value that is passed on in the perception of objects of another modality. A unity of assessment becomes a mediator for the emergence of bonds between objects of different modalities on the basis of psychophysical mechanisms alongside linguistic aspects of synesthesia [10; 9].

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