

**SCTMG 2020****International Scientific Conference «Social and Cultural Transformations in the  
Context of Modern Globalism»****CONCEPTUALIZATION AND INTERPRETATION OF EYE  
MOVEMENT**

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***Abstract***

The authors describe the linguistic means of representation of the ideas about the middle area expression (eyes) in the English language. They reveal the characteristics of the MIDDLE AREA EXPRESSION (EYES) concept, which includes the information about the perceptual acquisition of the middle area expression, and interpretive characteristics. The characteristics that give ideas about the perceptual acquisition of the middle area expression (eyes) are 'eye movement' and 'eye movement direction', 'eye movement', 'closing and opening of eyelids', 'the degree of closing and opening of eyelids', 'absence of eye movement', and the interpretative characteristics are the 'emotional state', 'functional (physiological) state', 'sign of communicative intention'. It is shown that the identified linguistic means tend to represent certain interpretative characteristics that can be considered dominant ones. The cognitive mechanisms for interpretation of the middle area expression are considered: "conceptual metaphor", "conceptual metonymy", "conceptual comparison", "focusing", "refocusing", "re-accentuation", and "conceptual integration". The authors argue that the integrated use of cognitive mechanisms allows describing the situation of facial movement colorfully and in an extraordinary way, taking into account human states, emotions, and communicative intentions. The way of presenting the situation of facial movement is determined by an individual's predisposition to linguo-creative thinking.

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## 1. Introduction

Nonverbal means of communication, called "kinesic movements" which accompany a person's speech, are a manifestation of their motor activity and are reflected in the language. This fact determines the interest in these means of communication not only for researchers of various fields of science (Camras et al., 2017; Chronaki et al., 2015), but also linguists.

In the studies of the authors investigating the linguistic problems of verbalization of kinesic phenomena, the principles of their lexicographic fixation, the system relations between the nominations of kinesic movements, their functioning in fiction texts, the role of kinesic means in the organization of cultural and informative communication are studied. The subject of the study is the interpretation of nonverbal signs at a comparative level in different languages, the classification of linguistic means used for the nomination of kinesic movements. Talking about the classification of linguistic means denoting kinemas, we would like to dwell more on the work of Khlystova (2005), in which the author, emphasizing the role of context for the interpretation of a movement as communicatively significant, identifies standard, contextual and original kinemas. Standard kinems regularly act as nonverbal means of information and retain their iconic essence in any communication situation, original kinems are not able to act as nonverbal means of information regularly, and contextual kinems, occupying an intermediate position, acquire communicative significance only if they are included in a certain situation. From the structural point of view, the author distinguishes a heterogeneous layer of lexical and syntactic units: one-word lexemes-kinems expressed by a verb or a verbal noun, free phrases, set phrases with limited combinability of components, proper phraseological phrases (Khlystova, 2005).

There are not many works devoted to kinesic units from cognitive position. Thus, Nesterova (2007) studies the structure of the human FACE concept sphere, which includes the concepts of FACE, EYE, NOSE, MOUTH, LIP, CHEEK, FOREHEAD, and CHIN, and describes the linguistic units that give an idea of the movements made by one or another part of the face. Gerasimova (2009) considers linguistic means expressing eye behavior and reveals their role in nonverbal communication. Papulinova (2003) and Golubeva (2006) explore a gesture frame, considering it as a unifying structure of knowledge, which determines the similarity and difference of linguistic means representing gestures.

The review of works shows that kinesic units are insufficiently investigated from the position of cognitive-discursive approach, which considers language as a cognitive process carried out in communicative activity.

## 2. Problem Statement

The research issue is presented by the conceptualization of facial movements and interpretation for linguistic means representing kinesic phenomena. In our study we assume that the FACIAL EXPRESSION concept may be modeled as a cognitive hypermatrix, the MIDDLE AREA EXPRESSION (EYES) concept is a component of this hypermatrix. There are certain cognitive mechanisms that determine the interpretation of linguistic units representing the concept of MIDDLE AREA EXPRESSION (EYES).

### 3. Research Questions

- 3.1. How is it possible to model the concept of FACIAL EXPRESSION?
- 3.2. What conceptual content is revealed by linguistic units designating eye movement?
- 3.3. What cognitive mechanisms determine interpretation of linguistic units designating eye movement?

### 4. Purpose of the Study

In accordance with the research questions the purpose of the study is:

- To model the concept of FACIAL EXPRESSION;
- To study the conceptual content revealed by linguistic units designating eyes movement;
- To find out cognitive mechanisms determining the interpretation of linguistic units designating eye movement

### 5. Research Methods

The object of the study is English linguistic units designating eye movement. The units were selected from the dictionaries. The subject of the study is conceptualization of eye movement and interpretation of linguistic means designating eye movement.

The following methods of investigating linguistic data were used: methods of definitional, conceptual and contextual analyses, and method of cognitive modeling.

### 6. Findings

#### 6.1. Concept MIDDLE AREA EXPRESSION (EYES) as a component of the concept FACIAL EXPRESSION

As the analysis shows, in the English language the phrase *facial expression* and the word *mimicry* can be used for the designation of facial movements. The study of the definitions of the linguistic units under consideration indicates that facial muscle movements and the states expressed by them are primarily verbalized by the phrase *facial expression*, while the word *mimicry* gives an idea of imitating the movements of someone or something. Based on the above, we denote the concept including the knowledge of the conceptualization of facial movements, as FACIAL EXPRESSION.

*Facial expression* “1) a gesture executed with the facial muscles; 2) the feelings expressed on a person's face; ‘a sad expression’; ‘a look of triumph’; ‘an angry face’”.

*Mimicry* “the act of mimicking; imitative behavior; the act, practice or art of copying the manner or expression of another”.

During the research of this concept, it is necessary to look at the definition of the word *face* “the front part of the head that in humans extends from the forehead to the chin and includes the mouth, nose, cheeks, and eyes”.

According to the definitions, movements of different muscles cause facial movements.

In terms of physiology the muscles of the face include cranial muscles and the tendon helmet, temporal muscles, the circular muscle of the face, the muscle raising the angle of the mouth, the buccal muscle, the muscle lowering the lower lip, the chin muscle, the muscle lowering the angle of the mouth, the circular muscle of the mouth, the chewing muscle, the nasal muscle and others. Taking into account the ordinary knowledge of the face movement, we define it as the movement of the organs constituting the face, that is, the movement of the forehead, eyes, nose, cheeks and cheekbones, lips, chin. On the basis of the written above, we can say that the concept of FACIAL EXPRESSION is integrative and can be represented as a set of concepts that have been designated as UPPER AREA EXPRESSION (FOREHEAD, EYEBROWS), MIDDLE AREA EXPRESSION (EYES, NOSE), LOWER AREA EXPRESSION (MOUTH, CHIN) (Babina & Proskurnich, 2019).

## **6.2. Linguistic units representing the content of the concept MIDDLE AREA EXPRESSION (EYES)**

The study of linguistic means of representing the MIDDLE AREA EXPRESSION (EYES) concept revealed the characteristics of this concept, which are divided into two groups: characteristics that reflect information about the perceptual conceptualization of movements of the eyes, and interpretative characteristics 'emotional state', 'functional (physiological) state' and 'sign of communicative intention'.

Among the characteristics that reflect information about the perceptual conceptualization of eye movements are:

- 'eye movement' and 'eye movement direction'

The analysis of linguistic means shows that, although some linguistic units are not actually means of representation of eye movements, they are able to express the above-mentioned characteristics. In particular, it is typical of the verbs of visual perception. Their definitions contain information about visual perception, which involves the movement of the eyes towards the object of visual perception: *look* "to direct your eyes in order to see", *glance* "to direct the eyes at or toward something briefly", *skew* "to look obliquely or sideways", *leer* "to look with a sidelong glance", *peek* "to glance quickly". It is necessary to note that the verbs *skew* and *leer* are used as verbs of visual perception in a figurative meaning. For example:

- 1) *The little fellow leered at him and whispered, 'Fancy a drop of the hard stuff?'*

The characteristics 'eye movement' and 'eye movement direction' are also expressed by phrasal verbs including the verb of visual perception *to look*: *look up* "to direct one's gaze upward", *look down* "to turn one's gaze downward at someone or something", *look back* "to gaze back and try to get a view of someone or something", *look aside* "to look to one side", for example:

- 2) *She looked down at the sandal and with one worn finger gently moved the heel to and fro on its fragile shred of skin.*

Besides, the characteristics 'eye movement' and 'eye movement direction' are represented by phrases and phraseological units that include the substantive *eye* and movement verbs: *roll (one's) eyes* "to turn one's eyes upward or around in a circle", *lift up the eyes* "to look up; to raise the eyes", *avert one's eyes* "to look away", *move eyes from side-to-side* "to change in position (eyes) from one point to another", *raise one's eyes* "to lift eyes; to move one's eyes to a higher position; elevate one's eyes",

*look/glance sideways* “to look towards one side by moving your eyes only, without moving your head much”, *lower one’s eyes* “to look down”, *turn (move) one’s eyes towards*, *screw up one’s eyes*:

3) *Earlier in the story Abraham lifted up his eyes and saw ahead of him the place where he thought he would kill his son.*

– ‘eye movement’, ‘closing and opening of eyelids’, and ‘the degree of closing and opening of eyelids’

These characteristics are represented by verbs that denote facial movement in the primary meaning: *wink* “1. to shut one eye briefly; 2. to close and open the eyelids quickly”, *bat* “to wink or flutter ((one’s eyelids) (e.g. *bat one’s eyelashes*))”, *goggle* “to roll or bulge. Used of the eyes”, *squint* “to look with the eyes partly closed”, and phrases with these verbs: *wink an eye*, *slam an eyelid*, *squint an eye*.

Interestingly, as the etymological dictionary points out, the verb *to bat* came to be used to refer to eye facial expressions as a result of meaning extension: “to move the eyelids” 1847, American English, an extended sense from earlier meaning “flutter (the wings) as a hawk” (1610s). Originally, it was used to denote the movement of the wings of a bird. The verb *wink* derived from the verb denoting movement: «Old English *wincian* “to blink, wink, close one’s eyes quickly,” from Proto-Germanic \**wink-* (source also of Dutch *winken*, Old High German *winkan* “move sideways, stagger; nod,” German *winken* “to wave, wink”), a gradational variant of the root of Old High German *wankon* “to stagger, totter,” Old Norse *vakka* “to stray, hover,” from PIE root \**weng-* “to bend, curve.” The meaning “close an eye as a hint or signal” is first recorded c. 1100; that of “close one’s eyes (to fault or irregularity)” first attested late 15c”. For example:

4) *Richard squinted up at the sun then fell into step beside her.*

As a means of representing this characteristic, verbs of light emission are also used, which acquire a figurative meaning: *twinkle* “to blink or wink the eyes”, *blink* “to close and open one or both of the eyes rapidly”. For example, the etymological dictionary indicates that the verb *blink* originally had the meaning of “light emission”: «meaning “cast a sudden, fleeting light” is from 1786; that of “shut the eyes momentarily and involuntarily” is from 1858»:

5) *McLeish blinked and looked apologetically at his superior.*

Another way of representing the characteristics ‘eye movement, ‘closing and opening of eyelids’, and ‘the degree of closing and opening of eyelids’ is by means of phrases that include the substantive *eyes*: *widen one’s eyes* “make bigger or more, open wide eyes”, *open one’s eyes wider* “broaden, expand, enlarge eyes”, *narrow one’s eyes* “to reduce in width or extent eyes; make eyes narrower”, *bulge one’s eyes* “to swell eyes outwards”, *close one’s eyes*, *shut one’s eyes*. For example:

6) *She smiled radiantly and allowed her eyes to widen slightly.*

– ‘absence of eye movement’

The characteristic ‘absence of eye movement’ is represented by verbs of visual perception, whose meanings include the idea of stillness of the gaze: *stare* “to look directly, fixedly, or vacantly, often with a wide-eyed gaze”. *Fix* – “hold or direct steadily”, *gaze* “to look steadily, intently, and with fixed attention”, *gawp* “stare stupidly; look with amazement”, *gape* “to stare wonderingly or stupidly, often with the mouth open”, *goggle* “to stare stupidly or fixedly, as in astonishment”, *glare* “stare fixedly and

angrily”, *peer* “look intently, searchingly, or with difficulty”, *gawk* “to stare or gape stupidly”, *glower* “to look or stare angrily or sullenly”.

It is necessary to note that some of these verbs express visual perception when they are used in a figurative meaning. When they are used in a literal meaning, they express facial movement. For example: *goggle* – eye movement, *gape* – early 13c., from an unrecorded Old English word or else from Old Norse *gapa* “to open the mouth wide, gape” (see *gap* (n.)). Related: *Gaped*; *gaping*. As a noun, “act of opening the mouth,” from 1530s. The verb *glare* in its literal meaning is used as a verb of light emission.

The above-mentioned verbs of visual perception are a complex and highly organized group of linguistic units that are able to render the idea of movement or lack of movement of the eyes/eyelids/eyelashes, closely related to the human gaze. In the process of conceptualization, they can indicate duration or intensity of the gaze, its focus or defocus, in combination with above-mentioned characteristics:

7) *Now and again he looked up from his book, stared at them intently and smiled.*

As a means of representing this characteristic set phrases with the word *eyes* and verbs of attachment are also used: *fix one's eyes on* “gaze upon, set one's sites on, stare at, look toward”, *fasten one's eyes (upon)* “to look upon steadily without cessation”, *settle one's eyes on*, *focus one's eyes on*, etc. For example:

8) *She fixed her eyes on Mr Hollins's face and waited for his answer.*

Along with verbs, the definition of which contains an indication of “stillness/fixation of the gaze”, this meaning can be realised in context, by using verbs in the negative construction: *not blink*, *not move eyeballs*, *(un)blink/wink*, *without blink/wink*, etc., for example:

9) *I couldn't even move my eyeballs, much less turn my head or talk.*

Among the characteristics that reflect information about the interpretation of eye movements, the following ones are identified:

- ‘emotional state’

In psychology, an emotional state is understood as “a person's experience of their attitude to the surrounding reality and to themselves at a certain point in time, relatively typical for this person; those states that are regulated mainly by the emotional sphere and cover emotional reactions and emotional relationships; relatively stable experiences». Thus, the characteristic ‘emotional state’ includes the ideas about human feelings and emotions.

The emotional state is expressed by the following linguistic units: phrases representing the characteristics ‘eye movement’ and ‘eye movement direction’: *roll (one's) eyes* “usually as an expression of exasperation, annoyance, impatience, or disdain”, *look sideways at* “look obliquely, with a side glance; glance at suspiciously or amorously”; verbs representing the characteristics ‘eye movement, ‘closing and opening of eyelids’, and ‘the degree of closing and opening of eyelids’: *squint* “as in disapproval”; verbs representing the characteristic ‘absence of eye movement’: *gawp* “with amazement”, *goggle* “as in astonishment”, *glare* “angrily”, *glower* “angrily or sullenly”.

10) *Jinny looked down guiltily. ‘Just thought I'd have a walk.’* In the sentence, the character looks down, feeling guilty, as the context shows.

- ‘functional (physiological) state’

To explain what is meant by this characteristic, it is necessary to consider how the functional state is understood in physiology and psychology. According to Leonova (1984), who studies the problems of psychology, functional (physiological) state is “a characteristic of the development of life-support processes at the level of individual physiological systems and the whole organism to solve behavioral problems. According to the research, physiological mechanisms ensure the development of metabolic, neuro-humoral, cerebral, vegetative and other processes in different conditions and modes of activity. Such types of psychophysiological states, manifested and characteristic of different situations, include, for example: ‘fatigue’, ‘drowsiness’, ‘boredom’, ‘stress’, ‘tension’ and other states”. It is pointed out that, despite the wide variety of functional states, they all have common physiological components. These components include sensory components of activity, which characterize the possibility of receiving and initial processing of incoming information (visual, auditory, etc.), then information components of activity, which provide information processing and decision-making on its basis. Indicators of the main cognitive processes - memory and thinking, represent this group. Based on the above, the functional state will be understood as a state of stress, tension, fatigue, hunger and the like, as well as mental activity of a person.

This characteristic is expressed by the following units: a collocation and verbs representing characteristics ‘eye movement, ‘closing and opening of eyelids’, and ‘the degree of closing and opening of eyelids’: *squint* “a person thinks about something and does not want to look at the internal image, they may involuntarily”, *blink* “people are thinking more or are feeling stressed”, *half-closed eyelids (lowering/close of eyelids)* “indicate tiredness”; verbs representing the characteristic ‘absence of eye movement’: *gawp* “stupidly”, *gape* “wonderingly or stupidly, often with the mouth open”, *gawk* “stupidly”.

11) *Blanche squinted thoughtfully, fixing the man in front of her with an inquisitive stare.* In the above example, the character squints and directs an inquiring glance, reflecting on the truthfulness of the story told.

– ‘sign of communicative intention’

This characteristic is identified due to the fact that facial movements can be interpreted as signals of a certain communicative intention, that is, a goal for the realization of which a person consciously or unconsciously makes a facial movement. Among the linguistic units that act as signs of communicative intention are the following: verbs and phrases that represent the characteristics ‘eye movement’ and ‘eye movement direction’: *leer* “indicative especially of sexual desire or sly and malicious intent”, *lift up the eyes* “as in prayer”; verbs and phrases that represent the characteristics ‘eye movement, ‘closing and opening of eyelids’, and ‘the degree of closing and opening of eyelids’: *wink* “typically as a signal of affection or greeting or to convey a message”, *close the eyes* “ignore, better see the internal images without external distraction”.

12) The girl's serious little face was delicate, rounded, promising that she would soon flower into at least as striking a beauty as her mother; in an attempt to make her smile Joseph winked theatrically at her, but this made her draw closer to her mother ... In this example, the character winks to establish contact with the girl, that is, the facial movement serves as a sign of communication intention.

### 6.3. Mechanisms for interpretation of linguistic units designating eye movement

In the course of the study, a number of mechanisms for interpretation of situations of eye movement were identified: “conceptual metaphor”, “conceptual metonymy”, “conceptual comparison”, “focusing”, “refocusing”, “reaccentuation”, “conceptual integration” (about interpretation see Boldyrev, 2014, 2017).

The mechanism of “conceptual metaphor” can be used to interpret eye movements (Barcelona, 2003). By means of this mechanism, the organ involved in the implementation of facial movement is interpreted as an active entity.

13) *I pointed out the mountains. ‘Ipsarion?’ She nodded. I indicated my chest and made like the Happy Wanderer up and down the terrace. Her eyes widened. She no doubt thought I’d been out in the sun too long.*

In the example, the noun *eyes*, used with the verb *to widen*, is understood as an active entity. This interpretation involves an appeal to the MIDDLE AREA EXPRESSION (EYES) matrix, the characteristics ‘eye movement’ and ‘degree of closing and opening of the eyelids’ are activated. The phrase in question is interpreted in the cognitive domain of EMOTIONAL STATE, as indicated by the linguistic context. The character's eyes widen in surprise.

It is interesting to note that the mechanism of “conceptual metaphor” can be used for interpreting examples in which eye-movement verbs are used to describe actions performed by objects.

14) *White socks winked from underneath his trousers.* In this example, the white socks look as if they wink from under the trousers of the person.

Another mechanism for interpretation is the mechanism of “conceptual metonymy”. Metonymic transfer can be carried out based on the PART – WHOLE model:

15) *Joseph's innocent eyes widened in alarm.* In the example, due to metonymic transfer, the person characterized by the adjective *innocent* is indicated through the reference to the organ that makes a mimic movement. The facial movement is conceptualized in the cognitive domain of PHYSIOLOGICAL STATE, because the character feels anxiety.

The mechanism of “conceptual comparison” involves identification of the reference area and the area of the object of comparison, revelation of the characteristics on the basis of which comparison of the two areas and enrichment of the area of the object of comparison is performed.

16) *‘He’s quite good-looking,’ Frau Nordern said. The blue eyes turned on Erika like searchlights. ‘Just an observation.* In the example, the movement of the eyes in the direction of the person in question is compared to the movement of a searchlight. The interpretation takes place in the cognitive domain of PHYSIOLOGICAL STATE, as indicated by the linguistic context. It should be noted that the mechanisms of “conceptual metaphor” and “focusing” are also used in interpreting this example, since the eyes are conceptualized as an active entity and the eye color is noted.

The mechanism of “focusing” can be used to interpret linguistic units designating eye movements. It is understood as an introduction of certain properties of objects or situations into the focus of attention (Iriskhanova, 2014).

17) *‘Is it safe?’ His blue eyes widened with the question.* In this example, the information about the appearance of the character who widens the eyes in surprise is profiled (the color of the eyes is



indicated). Conceptualization of the facial movement is performed in the cognitive domain of EMOTIONAL STATE.

The mechanism of “refocusing” can be used in the interpretation of linguistic units that denote eye movements. It means that some properties of objects or situations are taken out of the focus of attention and other properties of objects or situations are put into the focus:

18) *John rolled his eyes as he did a rough calculation.* Usually a person who rolls his eyes experiences negative emotions. In the above example from the English language, the character rolls his eyes carrying out calculations. That is, the interpretation of the phrase *roll one's eyes* is performed in the cognitive domain of PHYSIOLOGICAL STATE.

Another mechanism for interpretation is the mechanism of “re-accentuation” which involves a change in the evaluative meaning when interpretation takes place in the cognitive domain of EMOTIONAL STATE.

19) *She squinted in bewilderment at the ten or so boarders who had formed her little band of helpers .*

When a person looks squinting his eyes, he usually expresses his discontent. In this example from the English language, this mimic movement shows the person’s embarrassment, as the context shows.

Finally, the mechanism of “conceptual integration” can serve as a mechanism for interpretation of English linguistic units. In the following example, the interaction of the space that includes a schema of the integrated event (agent affects the patient and causes a certain action of the latter), and the space that renders the idea of the sequence of two events, takes place, and an integrated space in which the schema components are presented selectively and the events are integrated is created (Hedblom, Kutz, & Neuhaus, 2014). For example:

20) *‘That's romantic,’ she conceded, with a small smile. Her eyes were held for a few moments in the lazy gaze across the desk, then with a conscious effort, she blinked herself free, looked down at her notepad.* The given example is interesting because the agent and the patient coincide.

## 7. Conclusion

The concept of MIDDLE AREA EXPRESSION (EYES) is represented by a variety of linguistic means: one-word lexemes (verbs and verbal nouns), set and free phrases. It includes characteristics that reflect information about the perception of eye movements, and characteristics that reflect information about the interpretation of eye movements (‘emotional state’, ‘functional (physiological) state’, and ‘sign of communicative intention’.

Interpretation of facial movements involves an appeal to the background knowledge about facial expressions and usage of cognitive mechanisms among which we can name the mechanisms of “conceptual metaphor”, “conceptual metonymy”, “conceptual comparison”, “focusing”, “refocusing”, “re-accentuation”, “and conceptual integration”. Quite often, several mechanisms are used at once, which allows the speaker to describe the situation of facial movement colorfully and in an extraordinary way and describe a person’s state, emotions and intentions.

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