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Interpretation Of Forehead and Eyebrow Movements in Different System Languages

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Abstract: The article examines the duration of the muscle contraction underlying the eyebrow lift, which varies depending on the specifics of the situation: at the beginning of a communicative episode, this movement turns out to be longer than in the process of subsequent interaction. The study of the joint manifestation of various facial expressions revealed the presence of universal patterns inherent in all three analyzed cultures. The most typical facial component accompanying the raising of eyebrows is a smile. The antipode of the so—called "eyebrow flare", both from the point of view of neuromuscular organization and from the point of view of semantic interpretation, is the work of the muscle, which ensures lowering of the eyebrows and their displacement to each other.

Keywords: Interpretation, eyebrow movements, facial expression, connotation, patterns, languages.

Introduction: From the point of view of semiotics, a work of art is a collection of several interacting sign systems. At the same time, natural language is considered to be the key, unconditional and dominant code, since its semantic possibilities are not limited by anything [1, p. 75]. Its main feature is the ability to convey any facts, processes, objects, images of characters, their emotional states and non-verbal manifestations. Thus, the linguistic fabric of a literary text acts as a kind of meta-description of a person's extra-linguistic experience in relation to the surrounding reality [2, pp. 25-27].

It seems possible to consider the metalanguage not as a specific set of linguistic units, but as a component of the linguistic consciousness of a personality, directly related to thinking and two signaling systems [3, pp. 153-185]. The first signaling system, characterized by reactions to environmental stimuli, is characteristic of most animals, while the second signaling system is unique to humans, whose thinking is based on the ability to abstraction and complex forms of generalization. Man has not only adapted to natural conditions, but has also learned how to transform them to suit his needs. As a result, a second signaling system was formed in his mind, existing in the form of language. Everything that is "said" about the world becomes the equivalent of how this world is perceived by a person. Thus, pronouncing the word "lemon" evokes an idea of its sourness and habitual facial reactions when eating it; the second signaling system is activated. At this level, the word turns into a "signal of signals" that allows you to express any phenomena — actions, relationships, experiences, emotions, etc.. In other words, language is a second signaling system that belongs exclusively to human consciousness and manifests itself, in particular, in literary texts. So, when reading or pronouncing the phrase "frown", anyone is able to mentally reproduce the corresponding facial movement, which is also associated with the functioning of the second signaling system.

It follows from the above that the metalanguage, the role of which natural language plays in a work of fiction, is not limited by any framework and is capable of describing any non-linguistic phenomena, including non-verbal manifestations, since it is an integral part of human linguistic consciousness. Firstly, visual behavior in literary texts is conveyed using emotionally colored vocabulary with both positive and negative connotations. For example: "She bowed, picked up a flower and looked at Alisher with tender joyful surprise". In this example, the heroine's gaze correlates with the concept of "surprise". Additional characteristics of her gaze indicate feelings of joy, tenderness, love, gentleness and tenderness towards

the addressee. author strives to penetrate into the inner world of the heroine and reveal it to the reader. Consequently, the author evaluates the visual behavior of the character using expressively colored words with positive semantics.

Discussion

Let's consider another example where the hero's gaze is associated with the concept of "light", but expressed through vocabulary with a negative meaning: "Alisher's small, bilious eyes lit up with malicious joy". Here, the character's eyes convey emotions of anger and hostility. Alisher is happy about the delays and troubles of others. Additional characteristics of the predicate («to shine with malice») make it clear that such a look is not accidental: "bilious" eyes indicate his irritability and aggressiveness (cf.: bilious — "expressing irritability, sarcasm, anger"; malicious — "revealing malice"). Thus, additional descriptive elements characterizing the expression of the characters' eyes and framed with the help of expressive vocabulary give Turgenev the opportunity to convey the emotional states of the characters in more detail and figuratively. At the same time, the reader does not need to specifically analyze which emotions are conveyed by a particular facial action: the evaluative interpretation is embedded in the text by the author himself or the character-observer. Secondly, the description of the visual behavior of the characters is also carried out by constructing synonymous series, when the same non-verbal signal (kineme) is transmitted by various verbal formulas. This technique is the most common in works of small genres.

The first comparative cross-cultural study of eyebrow raising in situations of spontaneous, unintended social interaction makes it possible to formulate a number of conclusions about the specifics of the functioning of this facial movement and the features of facial signals in general. Eyebrow raising is ubiquitous in all three cultures studied, and, judging by observations, no cultural factors have been identified - be it the type of communication episode, age, or gender of the initiator or recipient of the signal — that would significantly limit the use of this movement in different social settings. The only possible exception is the situation when the initiator of the signal is a man and the recipient is a woman: at least, such cases were not recorded in the studied material. In the process of analyzing facial expressions, we got the impression that representatives of one of the cultures showed slightly less pronounced mimic activity compared to participants from the other two groups; it remains unclear whether this is due to differences in the distribution of soft tissues (for example, a more pronounced subcutaneous fat layer) or to the structural features of the bone and cartilage apparatus. We have not specifically studied this aspect, although such anatomical differences can potentially affect the temporal parameters of facial movements.

Raising the eyebrows in itself is a noticeable violation of the continuous flow of behavior: after a short pause, when the rest of the facial expressions remain motionless, the movement usually begins with a very rapid increase, followed by a phase of fixed position of variable duration, after which the eyebrows slowly return to their original position. Such a temporary organization is typical for the majority of recorded eyebrow movements, both numerous short—term elevations and less frequent long-term variations. Thus, there is a typical "motion configuration" underlying the term "eyebrow flash". It can be assumed that such a stable configuration is capable of turning almost any movement into a significant "stimulus". A study by Cranach and colleagues in 1980revealed a similar configuration in the case of "non-verbal threats" during conflict situations over an object in preschool children: the threatening movement began with a sharp wave of the arm to the upper point of shoulder flexion, followed by a distinct pause of immobility, after which the arm smoothly returned to its original position. In our material, this conclusion is confirmed by the fact that when AU 4 is turned on, the general kinematic structure of movement changes dramatically: raising the eyebrows begins slowly and is accompanied by averting the gaze (turning the head to the side, up or down). This fact highlights the close dependence of the signal quality on the motion configuration.

Conclusion

The temporal organization of facial events is generally similar in all three cultures: the phases of the beginning of movement, its maximum point, end, and total duration show similar parameters and distributions. The data obtained clearly show the existence of a characteristic pattern of "short eyebrow raising" with a total duration of about 20 frames or less. Most likely, this option corresponds to the classic "eyebrow flash". The question remains whether the differences in the total duration of movement are due to contextual factors or whether they are explained by anatomical racial characteristics (for example, individuals with less subcutaneous fat, which may be typical, create more noticeable signals that it takes less time to become distinguishable). This functional interpretation is supported by the fact that raising eyebrows at the beginning of social interaction usually has an extended duration, independent of additional variables. Obviously, in the initial phase of communication, a more prominent and slightly time-stretched signal has greater communicative significance.

Picture 1. Interpretation of eyebrow movement.

The analysis of facial movements in a comparative aspect allows us to identify both universal and linguistic and cultural features of their conceptualization in Uzbek and English. Eyebrow movements, according to FACS and intercultural studies, have a high degree of universality, but the ways of their linguistic representation vary depending on the structure of the national language and the characteristics of its emotional evaluation system. The first type of expression associated with the emotion of joy is characterized by a light and relaxed raising of the eyebrows, which corresponds to a soft eyebrow raise. In Russian, this movement is verbalized through expressions of raised eyebrows with joy, animated gaze, emphasizing the emotional state of the subject. English, on the contrary, tends to emphasize the dynamic aspect of movement — her eyebrows lifted slightly with joy, bright-eyed expression. Thus, the Russian language tends to interpret the eyebrow movement through an emotional assessment, whereas English captures mainly the kinematic side.

The second type of expression, perplexity— manifests itself in knitted eyebrows and tense eyebrows (AU 1 + AU 4). The Uzbek language system represents this pattern through the verbs “qovog’ini solmoq”, “hayratdan qoshlarini uymoq” (frowned in perplexity), focused on the final position of the eyebrows. The English language uses constructions like she furrowed her eyebrows in confusion, her eyebrows knit together, reflecting the process of eyebrow compression. Here, the difference is manifested in the fact that the English tradition conceptualizes movement as an action, while the Uzbek one conceptualizes it as a fixed state, which corresponds to the more general tendency of the English language to dynamically describe non—verbal behavior.

Picture 2. Interpretation of eyebrow movement.

The third pattern, anger, is accompanied by a sharp lowering and drawing of the eyebrows inward (AU 4). In Uzbek, this movement is verbalized with the words “g‘azabdan peshonasini tirishtirmoq”, furrowed her eyebrows with anger, emphasizing the intensity of the emotional state. The English equivalents — she scowled, her brows drew down in anger — also reflect the dynamics, but more often use generalized terms such as scowl, which include not only eyebrow movement, but also a set of facial changes. Thus, the English language demonstrates a high degree of abstraction in the nomination of facial complexes. The fourth type of expression — fear or distress — is characterized by a sharp raising of the inner ends of the eyebrows (AU 1 + AU 2), which creates a visual alarm signal. In Uzbek, such movements are described through the expression’s “dahshatdan qoshlari tepaga otilib chiqdi”, “qo’rquvdan ko’zi chiqib ketay dedi” where evaluative and interpretation of the emotional state prevails. The English language offers constructions of her eyebrows arched upward in fear, a distressed eyebrow raise, where, as in previous cases, the vertical dynamics of eyebrow movement is emphasized instead of emotional interpretation.

A comparison of the Uzbek and English language systems shows that with the general universality of eyebrow movements (as part of a biologically determined mimic program) The ways of their linguistic representation differ conceptually. Uzbek is dominated by assessments, emotional characteristics, and interpretations, while English preferably describes the kinematic parameters of movement — its direction, intensity, and speed. These differences reflect the peculiarities of national cognitive models of processing nonverbal behavior, which confirms the conclusion about the culturally determined variability of linguistic conceptualization of facial expressions while maintaining a universal biomechanical basis.

A number of configurations that occur when raising the eyebrows up coincide with universal facial patterns that convey surprise, fear (with a different dynamic of movement), or even disbelief. Nevertheless, the recorded movements are much more often combined

with a smile, individual vocal reactions, closing of the eyes, as well as tilting the head up or down. These combinations do not seem to be directly related to the type of social interaction, at least within the current level of analysis. In all three cultures studied, these patterns appear with comparable frequency, although the specifics of the context in which they occur may vary significantly.

There is a problem of determining the possible specific function of raising eyebrows. As expected, the interpretation for the observer is primarily determined by the context — not so much situational as mimic, that is, a combination of raising eyebrows with a limited set of other facial or head movements, for example, with a smile accentuated by a noticeable raising of eyebrows. In such a mimic environment, raising eyebrows can highlight a wide range of meanings.: it can indicate the direction of the gaze, express agreement or disagreement accompanied by head movements, as well as emphasize individual mimic acts (action units) or their complexes. However, in most cases, including situations with “prolonged eyebrow raising,” this signal enhances predominantly positive manifestations, among which the “smile” occupies a leading position.

The methodological intention of the study was to include all the manifestations of eyebrow raising in order to avoid distortion of the sample, including those episodes where the eyebrows are fixed in the upper position for a long time (“extended brow raise”). Such a movement undoubtedly represents a different type of facial signal compared to a “short eyebrow lift” and can express attention, doubt, disbelief, or similar states. In addition, raising eyebrows can accompany individual verbal cues, enhancing their semantic meaning for the participants in communication. Consequently, raising eyebrows — regardless of cultural affiliation and specific situation — functions as a means of accentuating other social signals, mostly positive, although sometimes negative. Thus, the “semantics” of raising eyebrows (both short-term and long-term) can be characterized as a universal “mimic marker”, a kind of behavioral “mark of selection”, the role of which was probably formed due to the visibility and high visual distinctiveness of this movement.

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