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Non-manual Component of the Russian Sign Language

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Abstract

This article analyzes the features of the non-manual component in the Russian sign language. Based on the video descriptions from the Russian sign language corpus, quantitative and qualitative characteristics of such non-manual markers as eyebrow movements, articulation (labial gestures and mouthing), head movements and gaze direction are specified. As a result, conclusions are made about the role of the non-manual component in the system of natural gestural speech.

Keywords: non-manual markers of the sign language, Russian sign language, multimodality

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1. Introduction

In the light of the multilingual and multimodal approach to communication, a non-verbal channel of communication is currently being closely studied. For a long time sign languages based on visual-gestural-tactile cultures have remained unrecognized; now some of them have gained a form of legal recognition, but still some have no status. Research in sign languages is a relatively new sphere for both linguistics and sociology of language. Both research areas acquired a wider attention in the middle of the 20th century and are still being developed. Recently, language policy researchers have stated that sign languages should gain recognition not as languages of disabled but as minority languages [1]. There are more than 140 natural sign languages in the world [7], and if some of them have been properly studied, a serious study of the Russian sign language (RSL) - the main means of communication for deaf and hearing-impaired people in the Russian Federation – has started relatively recently. Despite a growing interest in RSL and an active study of its grammar and structure, the main focus is still on its manual components. The functioning of the non-manual RSL markers is rarely covered in the Russian research community. However, as foreign studies show, the use

of non-manual components affects all levels of the sign language system, from non-meaningful phonological components of lexical units to discursive markers [1, p 668]. This justifies the need for a closer attention to this phenomenon in RSL.

2. Literature Review and Methods

Characterizing sign languages, people often call them "manual" and consisting of hand gestures, and this is partly true since a large body of gestures really refers to the so-called manual class. However, a non-manual component, which consists of markers based not on hand movements, but on facial expressions, articulation, head and body movements, as well as eye rotation and gaze direction, plays an equally important role in sign languages.

First of all, it is worth noting that the grammatical system of sign languages, like the grammatical system of languages that sound, includes morphology, syntax and word formation. Moreover, sign languages also have minimal structural units, the presence of which was first mentioned by the American linguist W. Stokoe. In his work «Sign language structure» [4] – a kind of the first grammar of the American sign language – Stokoe defined and described the main components of a gesture: localization, hand configuration and the nature of movement. Later, the orientation of the hand and the non-manual component were added to the specified elements [2]. From this, researchers started to distinguish three basic classes of gestures: manual, non-manual and multimodal [3]. The last two classes are the object of the study.

While the most significant articulator for manual gestures is hands, non-manual and combined gestures use a variety of means to express particular meanings. Usually, the list of non-manual articulators includes the head, parts of the face (eyes, nose, mouth, lips, cheeks, eyebrows, etc.) and torso. In addition, researchers consider as non-manual the articulation, which consists of mouthing (speaking lips) and labial gestures, or mouth gestures. The difference between the two is mainly in the fact that during mouthing the word of the spoken language is articulated (often silently), while the lip gestures are reproduced independently of the sound equivalent. It is important to note that non-manual markers can be used either with or without hands, or in combination with the manual component and with each other. This makes it possible to call their articulators potentially independent [1, p. 668]. To study the features of the non-manual markers in natural gestural speech, 20 videos with 14 speech impaired informants were selected on the website of the Russian Sign Language Corpus [6]. The videos included spontaneous narratives (10 videos), retelling of the cartoons (6 movies), stories based on images (3

videos), and one monologue (1 video). Video analysis included fixing and describing the quantitative and qualitative characteristics of such non-manual markers as eyebrow movements, gaze direction, head movements, mouthing and labial gestures.

3. Results and Discussion

Comparing the transcriptions of the chosen videos, we came to the following results

TABLE 1: Transcription of the videos.

Video title	Total gestures	Marked	Mouthing	Lip gestures	Brows	Eyes	Head
1. Cherry (s4)	85	60	24	16	16	19	8
2. Hat (s4)	132	98	14	42	48	37	15
3. On the love of reading (s4)	64	62	60	-	10	8	9
4. Speech impaired on the bus (s5)	137	93	20	19	32	26	23
5. Choosing a profession (s5)	79	40	23	5	3	3	5
6. English language (s22)	137	112	82	5	1	26	30
7. Admission (s23)	51	20	7	3	3	8	7
8. First time in kindergarten (s25)	57	34	15	5	3	11	17
9. Petard (s37)	56	34	11	1	8	13	8
10. Loneliness in the Internet (s37)	75	49	32	5	7	4	5
11. Childhood memories (s55)	94	68	31	12	11	18	12
12. The man fell into a manhole (s16)	77	44	11	9	5	22	11
13. Cherry (s9)	42	30	12	9	9	6	7
14. The lives of deaf artists (s42)	163	103	28	19	22	30	41
15. Canary Row_1 (s42)	79	46	12	9	11	15	11
16. Canary Row_1 (s41)	34	14	6	3	3	4	2
17. Canary Row_2 (s41)	27	13	3	1	2	9	3
18. Canary Row_3 (s40)	56	42	12	10	5	22	8
19. Canary Row_2 (s54)	72	61	24	24	10	5	18
20. Canary Row_7 (s56)	47	22	9	3	4	10	3

First of all, it is necessary to note the prevalence of the non-manual component: in the selected videos it accompanies from 40% to 96% of all gestures, on average marking 65% of the speech flow.

The most commonly used components are markers associated with the movement of the lips and mouth, namely, lip gestures and mouthing. In total, they prevail in 12 out of 20 videos, marking from 21% to 96% of all non-manual markers, on average - 58%. Mouthing

is more common than labial gestures (40% and 18%, respectively), accompanying, in addition to conventional gestures, all the dactylic words. Labial gestures, in addition to their main sense-differentiating function, often carry a special meaning, giving manual gestures additional value. Thus, the gesture UNPLEASANTLY, reproduced with puffed-out cheeks, acquires the meaning of "hard" (Childhood memories, s55).

Next to mouthing come the movements of the eyelids and the direction of gaze - 31%. Most often, eye-markers accompany gestures that are semantically associated with vision (VIEW, LOOK, INSPECT, SEE). Changing the position of the gaze is also used in prosody aiming at attracting attention, filling pauses, setting semantic stress and exclamation.

On average, head movements mark 22% of combined and non-manual gestures. Nods or turns of the head to the side along with the aversion of the eyes mark the end of the statement, filling in the pauses between them. In addition, the past tense and the imperative mood, combined with a gaze, are also noted with nods and drooping heads.

Eyebrow movements, averaging 20% of the number of non-manual markers, are not only a means of expressing emotions, but also affect the transmission of grammatical meanings. Frown and turn of the head convey denial, while raised eyebrows and chin are involved in the construction of interrogative utterances. Moreover, raised eyebrows often involve a gesture with the meaning of "big": PROGRESS (On the Love of Reading, s4), HIGH (Hat, s4), SET (Cherry, s9). Frowning eyebrows, on the contrary, help to describe a small subject: SMALL (Childhood memories, s55).

4. Conclusion

Summarizing the above, we can define the functions of a non-manual component. First, non-manual markers play an important role in distinguishing meaning, helping to differentiate between concepts similar or coinciding in gesticulation. Further, the non-manual component affects the transfer of morphological and syntactic meanings of the gesture, marking the question, the denial, and some ways of expressing the imperative. The importance of the non-manual component is also manifested in prosodic accompaniment, when the speed of gesticulation, in combination with the peculiarities of the non-manual articulators, regulate the intonation of the utterance and allow of emphasizing certain concepts.

It is obvious that the non-manual component is not only a significant prosodic tool, but also an important element of the RSL system, expressed grammatically, lexically

and stylistically. This implies the need for further, more detailed study of its features and manifestation in all aspects of RSL.

References

[1] Crasborn O. A. Non-Manual Structures of Sign Languages // Encyclopedia of Language & Linguistics / Keith Brown (Editor-in-Chief). – 2006. – Vol. 8. – P. 668– 672.

[2] Battison R. M. Phonological deletion in American Sign Language // Sign Language Studies. – 1974. – Vol. 5. – P. 1–19.

[3] Brennan M. The Visual World of BSL: An Introduction // Dictionary of British Sign Language / David Brien (Editor). – 1992. – P. 1–33.

[4] Stokoe W. Sign Language Structure: An Outline of the Visual Communication System of the American Deaf // Studies in linguistics: Occasional papers / W. Stokoe. – 1960. – No. 8. – 78 p.

[5] Корпус русского жестового языка [Электронный ресурс] / С. И. Буркова. – Новосибирск, 2012–2015. – Режим доступа: http://rsl.nstu.ru/ (дата обращения: 20.04.19)

[6] Sign Language [Электронный ресурс] // Ethnologue: Languages of the World, 22nd Edition / SIL International Publications. – 2019 – Режим доступа: http://www.ethnologue.com/subgroups/sign-language (дата обращения: 20.04.19)