

Verbal and gestural representation of the space-time relation in multimodal communication¹

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Abstract

This research deals with consideration of verbal and gestural representation of the space-time relation in multimodal communication.

The aim of this research is to define the way space and time relate in verbal and gestural forms in oral narrative of Russian-speaking students.

Our research is based on the works of foreign and Russian researchers in the field of cognitive linguistics such as: Alan Cienki, Cornelia Müller, Daniel Casasanto, E.A.Grishina, E.S.Kubryakova, N. D. Arutyunova, G.E.Kreydlin, etc.

According to the results of the research the activity of gesticulation depends on gender accessory. The number of gestures the female informants made surpasses the number of gestures of the male informants by several times.

The greatest number of gestures was revealed in past events.

The greatest number of gestures in all episodes was made by two hands.

Speaking about the events of the past informants gesticulated with their left hands more often, whereas speaking about the events of the future they used the right-handed gestures more frequently.

On the basis of the obtained data we made the assumption that the concept of the lateral time axis in oral narrative can be also applied in Russian narrative, which means that the space-time model might be general for European languages.

Keywords: multimodal communication, gestural unit, oral narrative

Introduction

In Russia studying of gesticulation is still regarded as the area which is more likely to be interesting for psychologists, than for linguists. Thus, when studying oral speech the gestures that accompany it are simply brought out of consideration and practically not perceived as one of the sources of knowledge about what linguistic processes occur in this aspect of the oral statement. In a number of the western universities studying of basic means of gestural behavior is included into an obligatory course for linguistics and

philology students, regular summer schools on gesticulation take place, as a result the linguists are accustomed to use gestural data at the very beginning of professional career. In Russia gesticulation studies are still considered as an exotic by-product of studying of oral speech.

With the development of new informational technologies the possibility of research in multimodal communication has increased. Digital video filming allows to carry out comprehensive segmentation of oral narrative and, thus, gives an opportunity of drawing up the multimedia corpus, allowing to investigate nonverbal components of oral speech.

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The aim of this research is to define the way space and time relate in verbal and gestural forms in oral narrative of Russian-speaking students.

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Relevant researches

We were inspired by the research of the psycholinguist Daniel Casasanto that deals with studying of gestures, expressing space-time metaphor. In "Hands of Time" he writes that when one speaks about time, he usually uses the words expressing some position in space, and it is thus logical to assume that gestures used by the speaker indicates the way the speaker imagines time is settled down in space. According to the results of his research, English-speakers have an accurate model of a horizontal time axis on which the past is located on the left, and the future – on the right from the speaker. However, this model represents only spontaneous gesticulation. When examinees gesticulated intentionally, this axis took a vertical (sagittal) position, i.e. the past is behind and the future is ahead. The similar model of the time axis is built by Alan Cienki and Cornelia Müller in the number of their research works.

In our research we considered only spontaneous gesticulation, for this research deals with the representation of space-time relation is *oral* narrative.

Method

1 Materials

As the material for this research we used the video recordings of the interviews of the Perm state national research university students. In this particular research 14 students' interviews were analyzed.

The task for informants was to tell about anything that makes them happy. As the task given to the students presupposes some bias in the direction of talk about past, it is clear that the whole amount of events they mention refers to the past time. However, there is a sufficient number of students that associate happiness with present and future events.

2 Participants

Participants were 8 female and 6 male students. Their age varies from 17 to 19. At the time of the experiment they all were first year students of the Perm state university.

3 Procedure

Step 1.

First we divided the narrative into two modalities to consider the verbal part separately from the gestural one.

To make it more convenient the text of each of the 14 interviews was transcribed. We divided each interview into three groups of events relating to the past, the present and the future.

Step 2.

After that we divided the events of the past, the present and the future into thematic groups according to the following criteria:

- general semantics of the sentences,
- words and expressions having temporal semantics, marking this or that time, for example adverbs (*long ago, soon, now, earlier, later, then*)
- the direct nomination of this or that time.

Thus, we received 65 events:

- 37 events relating to the past,
- 22 events relating to the present,
- 6 events relating to future time.

Step 3.

The next step is the separation and calculation of gestural units in each episode and their division into three groups: right-handed, two-handed and left-handed gestures.

In this particular research we did not take into consideration the type of gesture, however this aspect is definitely going to be regarded in the following researches.

Step 4.

The final step is the comparison of verbal and gestural representation of the space-time relation.

4 Data analysis

We analysed both verbal and gestural codings. During the data analysis we found out that 57% of events (37) belong to the past, 34% (22) - to the present, and 9% of events (6) belong to future time.

It made it possible to draw a conclusion that for the students aged 17-19 years the happiness associates with the past in most cases.

As each of interrogated students told about his or her happy moments from the real life experience, we also divided the events according to the referent of happiness further to compare, what particular events the students associate with the past, the present, and the future.

As a result we allocated 9 types of referents:

- a) Close people – 28% (18);
- b) Feelings and emotions – 26% (17);
- c) Study and work – 14% (10);
- d) The purposes – 12% (8);
- e) The nature – 5% (4);
- f) Surprises – 5% (4);
- g) Travel – 4% (2);
- h) Creativity – 3% (1);
- i) Pets – 3% (1).

In the past events the referents "Study" (7 - 70%), "Feelings" (15 - 89%), "Surprise" (4 - 100%), "Nature" (4 - 92%) prevail; in present events - the referent "Relatives and friends" (9 - 50%); the referents "Pets" and "Creativity" are most frequent in future events.

According to the obtained data the interrogated girls gesticulate much more actively, than the interrogated young men. Out of 122 recorded gestures 107 were made by girls, and only 15 – by the interviewed young men. Thus, out of total amount of gestural units 88% (107) gesticulation was received from female and only 12% (15) from male informants.

All in all we recorded 122 well expressed gestural units. Out of them 80 gestures were referred to "past events", 35 gestures - to "present events", in "future events" 7 gestures are recorded.

Thus, 80 (65%) gestures - past events, 35 (29%) - present events, 7 (6%) of gesticulation is presented in future events.

Out of 80 gestures relating to events of the past, there are 19 (24%) left-handed gestures, 11 (14%) right-handed gestures, 50 (62%) two-handed gestures.

Out of 35 gestures relating to events of the present, there are 3 (9%) left-handed gestures, 4 (11%) right-handed gestures, 28 (80%) two-handed gestures.

Out of 7 gestures relating to events of the future, there is one (14%) left-handed gesture, 4 (57%) right-handed gestures, 2 (29%) two-handed gestures.

It turns out that the most active gesticulation is shown in past events.

Thus, it is possible to draw a conclusion that students gesticulated most actively speaking about the past and vice versa, speaking about the future students gesticulated least actively.

1. Informants gesticulated with two hands more often when speaking about the present events (50 - 80%) than about the events of the past (63%) and the events of the future (28%) ($\chi^2 = 20.45$; $df = 2$; $p = 0.001$).

2. Informants gesticulated with their left hand more often when speaking about the events of the past (24%) than about the events of the future (14%) and the present (9%) ($\chi^2 = 7.32$; $df = 2$; $p = 0.05$).

3. Informants gesticulated with their right hand more often, whereas speaking about the events of the future (58%) than about the events of the past (28%) and the events of the present (14%) ($\chi^2 = 18.45$; $df = 2$; $p = 0.001$).

Results

1. According to the obtained data the frequency of gesticulation depends on gender accessory of an informant.

2. The biggest number of gestures (37 gestures - 65%) was revealed in past events.

3. The biggest number of gestures in all episodes (80 gestures - 65,5%) was made with two hands.

4. Speaking about the events of the past informants gesticulated with their left hands more often, whereas speaking about the events of the future they used the right-handed gestures more frequently.

5. On the basis of the obtained data we made the assumption that the concept of the lateral time axis in oral narrative can be also applied in Russian narrative, which means that the space-time model might be general for both Russian and English languages.

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