

## **Maria Tomskaya**

Moscow State Linguistic University

Россия, Москва, 119034, Остоженка, 38

Tel.: +7 (499) 245 32 39

E-mail: [scog@linguanet.ru](mailto:scog@linguanet.ru)

*Research interests: gender linguistics, discourse studies, institutionalized communication, verbal and non-verbal aspects of intercultural communication*

## **Irina Zaytseva**

Moscow State Linguistic University

Россия, Москва, 119034, Остоженка, 38

Tel.: +7 (916) 716 98 78

E-mail: [zaytsevairina@inbox.ru](mailto:zaytsevairina@inbox.ru)

*Research interests: multimodality, semiotics, academic discourse*

# MULTIMEDIA REPRESENTATION OF KNOWLEDGE IN ACADEMIC DISCOURSE

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*The article focuses on academic presentations created with the help of multimedia programmes. The presentation is regarded as a special form of new academic knowledge representation. An academic presentation is explored as a multimodal phenomenon due to the fact that different channels or modes are activated during its perception.*

*Data perception constitutes a part of the context which in itself is a semiotic event involving various components (an addresser, an addressee, the message itself, the channel of communication and the code). The choice of the code and the channel depends on different factors (type of the audience, the nature of the message, etc). In this way, the information for non-professionals will be most likely presented through visualization with the help of infographics (schemes, figures, charts, etc).*

*Talking about the professional audience the speaker may resort to visualization to a lesser degree or he may not use it at all. His message will be transmitted only with the help of verbal means, which will not prevent the audience from perceiving and understanding new knowledge correctly.*

*The presentation regime of rapid successive slide show may be regarded the heritage of 'clip thinking' which is characterized by a non-linear, simultaneous way of information perception.*

*At the present stage of technology development visualization is becoming the most common means of transmitting information in academic discourse, due to peculiarities of data perception by the man of today.*

*KEY WORDS: academic presentation, multimodal text, visualization, infographics, 'clip thinking'.*

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## **Introduction**

In the modern world information technologies have penetrated all spheres of social life and have become its integral part. In the information society of the 21<sup>st</sup> century the use

of media-technologies has already become a necessity, including such spheres as science and education.

The object of our investigation is an academic presentation created with the help of 'Power Point' programme (or other similar programmes). Academic presentation is treated as a special genre within academic discourse. It is "a complex monological text with features of dialogism, in which the lecturer aims to represent new knowledge widening cultural, scientific and socio-political outlook of recipients" (Ivanova 2001, p. 72). To fulfill this task different communicative components are simultaneously used in a presentation: oral and written speech, gestures and facial expressions of the lecturer, various means of information visualization. Thus, an academic presentation appears to be a heterogeneous text.

### **Academic presentation as a multimodal text**

While perceiving information during the process of communication a human uses different channels (modes). In this case we deal with multimodal texts.

In linguistics there exist a number of alternative terms to describe the notion of a heterogeneous text. Their names illustrate the dominant aspect to which a researcher wants to pay attention in his study.

Sorokin and Tarasov introduced the notion of "creolized text" which they defined as "the text containing two non-homogeneous parts: verbal and non-verbal (which belongs to the sign systems other than the natural language)" (Sorokin *et al.* 1990, p. 180). Generally, the non-verbal component of a creolized text is represented with the help of iconic means. Thus, the term "iconic text" suggested by Voloskovich (Voloskovich 2012) seems to be more appropriate for such a case.

Eiger and Jukht (Eiger *et al.* 1974) spoke about an opposition between mono- and polycode texts. The term "polycode text" focuses on the idea of various codes interaction. Non-verbal code is expressed through a photo, a picture, a diagram, facial expressions and gestures (for oral communication). Some researchers state that the mere presence of non-verbal means in a text (usually, the problem is discussed in relation to written communication) does not indicate a polycode text. To acquire the status of "a polycode text" non-verbal components should be independent information carriers, therefore they should provide an additional shade of meaning (Chernyavskaya 2009).

We assume that while perceiving information during the process of cognition and communication a human uses different channels (modes), particularly modes of perception: audial, visual, kinesthetic, etc. Their combination constitutes the notion of multimodality (Iriskhanova 2014).

The term "multimodality" can be interpreted differently: it possesses narrow and broad meanings. From a narrow perspective, multimodality is the perception of a text with the help of different modes that are used simultaneously (in this case the notions "multimodal text" and "polycode text" are opposed). In a broad sense multimodality comprises both different modes of perception and different codes (thus, "polycode text" is included in "multimodal text"). In our research we are inclined to accept the second point of view.

The psychological category of perception is the base for the process of cognition.

There exist many classifications of types of perception. One of them is based on the modality which dominates in the perception process: visual, audial, tactile, kinesthetic, olfactory, and gustatory. According to this classification, all people can be categorized as visuals with domineering image-schemas in knowledge acquisition, audials who receive their knowledge via auditory receptor, kinesthetics who perceive the reality with the help of sense impressions, etc (Maklakov 2016).

Many psychological experiments have revealed that different types of perception are rarely found in their pure form. As a rule, they are combined together to create complex types of perception. The most commonly used pairs of modes are visual – audial, visual – kinesthetic, audial – tactile. It should be noted that the closest link is observed in visual – audial modes (Barybina 2005).

The idea is proved by experimental data. It is believed that while perceiving new information a human remembers 15% of information via audial channel, 25% – via visual and 65% – while using both audial and visual channels (Garyaev *et al.* 2008).

The studies of perception show that the dominance of visual perception results from technological advance and communication principles in society.

Data perception does not take place in a vacuum. It is always context-dependent, which can be named a sign situation consisting of different components such as an addresser, an addressee, the message itself, the channel of communication and the code (the system of signs).

In relation to an academic presentation, the components are as follows:

- an addresser – the speaker, the lecture, the researcher;
- an addressee – the audience consisting either of colleagues-professionals or of young researchers (non-professionals);
- the message – new academic knowledge;
- the channel – audial or audial-visual;
- the code – verbal or non-verbal (images, diagrams, etc).

## **Knowledge visualization in the academic presentation**

We hypothesize that the choice of the code and the channel depends on the type of the audience. In this way, the information for non-professionals will be most likely presented through visualization with the help of infographics (schemes, figures, charts, etc). Moreover, on the slides one may find the key notions with their definitions mentioned by the speaker to facilitate the process of information perception and understanding.

Talking about the professional audience the speaker may resort to visualization to a lesser degree. Furthermore, performing in front of the colleagues he may not use visualization at all. Thus, his message will be transmitted only with the help of verbal means, which will not prevent the audience from perceiving and understanding new knowledge correctly. It should be noted that in modern world purely audial presentations (without

any visualization) is a rare case and they may be found among the most authoritative and famous representatives of the scientific community.

At the present stage of technology development visualization in the form of academic discourse presentations is becoming the most common means of new academic knowledge representation.

The notion of visualization is closely related to the notion of infographics. Kosheva and Derbak define infographics as “a graphic means for representing data or knowledge, the main aim of which is to provide the audience with complex information in an accurate and fast way” (Kosheva *et al.* 2016, p. 50). Infographics contain a great amount of information which is represented to the listeners in a bright and comprehensible way, created at the interface of a picture, a word and a numeral. “Simplified” new knowledge in a graphic form can be understood not only by a limited group of specialists, but also by non-professionals who are interested in the subject.

In fact, infographics represent a ‘clip’ type of knowledge representation which corresponds to the development of modern technologies, caused by the increase in the information flow and rapid progress in the sphere of electronic devices.

We conducted a pilot experiment among students where we analyzed academic reports with ‘Power Point’ presentations made at the conference on Language and Philology taking place in Moscow, 2014. 18 students of Moscow State Linguistic University participated in our research, aged 21–24 years. Females (13 people) represented the vast majority. 8 students studied Psychology; the rest of the focus group were the students of the Faculty of Translation and Interpreting.

Our pilot experiment was aimed at revealing the most suitable way of information transmission with the help of presentations, which could contribute best to new knowledge perception.

We were interested in the following modes: language (oral speech skills), visual (slides of the presentation) and performative (non-verbal behaviour of the reporter).

All the participants listened to three and more reports, but we focused on the analyses of three of them: 1) the report with a textual Power Point presentation; 2) the report where language and visual modes are intertwined (“close interaction”); 3) the report with a Power Point presentation with absent or scarce oral speech skills and non-verbal behavior demonstration, which is regarded as the means of drawing attention (“limited interaction”).

After watching the presentations our test subjects were to fill in the questionnaire, which included the questions concerning individual perception of each student and character features of each presentation.

Talking about the presentations, the students evaluated the structural part (the design of the slides, the sequence of the slides, the readability of the slides, and the structure of the presentation as a whole) and the meaningful part (the report informativeness, the attractiveness of the topic, and the possibility to enrich the students’ knowledge) (Tomskaya 2015).

## Conclusion

The findings of the pilot experiment were as follows: the majority of our participants expressed appreciation for the report, where language, visual and kinesthetic modes were intertwined. Thus, in perception of short academic presentations (up to 10–15 minutes) by non-professional audience, the information density of slides does not cause information overload. Managing the attention of the audience during the presentation with the help of verbal and performative (gestures, facial expressions) means enhances the effectiveness of knowledge representation. The structure of the presentation and the slide design may significantly influence the individual perception of data as a whole. These findings should be verified in the next experiment.

The young generation who possesses ‘clip thinking’ (the term introduced by Toffler, 1980) is characterized by a non-linear, simultaneous way of information perception. To satisfy their needs the special forms of knowledge representation have to be introduced. In this regard, the verbal-visual form of academic presentations seems to be the most appropriate. Fast-changing slides respond to the constraints of clip-thinking. A succinct form of thought transfer complies with fast speed of information absorbing, and the presence of iconic means helps to process information with the help of imagery.

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Moscow State Linguistic University

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### **Irina Zaytseva**

Moscow State Linguistic University

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## **MULTIMEDIA REPRESENTATION OF KNOWLEDGE IN ACADEMIC DISCOURSE**

### **Summary**

The 'Power Point' programme is known worldwide for creating multimedia presentations. One of the main characteristic features of an academic presentation is its multimodality, i.e. the simultaneous use of different communicative components, such as oral and written speech, various means of projected data visualization, including video- and audio-materials, gestures and facial expressions of the lecturer or the reporter. Language mode is created by the elements of oral report, while the visual mode is made up with the help of the presentation slides which may contain text, pictures, infographics, videotapes, etc. Performative mode is formed by the non-verbal behaviour of the lecturer, that is his body language (gestures, facial expressions, etc) and the design of the presentation slides.

The way the information (which is supposed to be transformed into new knowledge) in an academic presentation can be provided depends on many extra-linguistic factors, including the type of the audience. In this case its professional status plays an important role. Our pilot experiment showed that visualization of verbal information for non-professionals may become the most suitable means of new knowledge representation. We believe that it can be accounted for the peculiarities of information perception by the modern generation due to computer technology progress, the increase in information flow and availability of electronic devices. Academic presentation slides make it possible to perceive complex information in a more simple visual-verbal way, which corresponds to the so-called 'clip-thinking'. However, further experimental research is necessary to be carried out to justify this point of view.

KEY WORDS: academic presentation, multimodal text, visualization, infographics, 'clip thinking'.