Experimental linguistics

Anna Laurinavichyute

Mariya Khudyakova

1. Course description

1.1 Title of a course

Experimental linguistics (2nd year students of the Master's programme "Linguistic Theory and Language Description" of the National Research University Higher School of Economics).

1.2 Pre-requisites

The following competences are required to study the discipline (including academic courses):
- Introduction to linguistics (1st year MA course)
- Theory in language description (1st year MA course)

1.3 Course type (compulsory, elective, optional)

The course is compulsory course for 2nd year students of the MA programme "Linguistic Theory and Language Description".

1.4 Abstract

The aim of the course is to introduce the students to the study of experimental methods used in the study of language. The main focus of the course is the use of experimental methods in field linguistics and study of bilingualism. The course is essentially based on students' reading of important articles in the domain, their presentation and classroom discussions and quizzes.

2. Learning Objectives

Learning objectives of the course *Functional Approaches to Natural Language* are to introduce students to:

- theoretic and methodological knowledge in experimental linguistics;
- skills in experiment design to study linguistic phenomena in various categories of subjects;
- modern instrumental approaches in psycholinguistics;
- critical analysis of modern psycholinguistic research.

3. Learning outcomes

After completing the study of the discipline *Functional Approaches to Natural Language* the student should master / be able to:

- theoretical background of experiment design in linguistic studies;
- fundamental principles of preparing a linguistic experiment;
- basic instrumental methods in modern psycholinguistics and their application;
- basic literature on empirical research in psycho- and neurolinguistics;
- apply her knowledge to suggest an appropriate experiment design and to carry out an experimental study;
- critically approach various studies in experimental linguistics.

4. Course Plan

- **Introduction.**

An overview of the instrumental repertoire of modern psycholinguistics appropriate in field conditions, including behavorial methods and eye-tracking. Their advantages and pitfalls. Sampling subjects. Examples of domains where experimental methods can be applied in the field.

- **Fundamentals of experimental approaches to the study of language**.

Experiment in the narrow vs. broad sense. What is a hypothesis. The principle of verification and its limitations, the principle of falsification. The notion of experimental validity of an experimental study. Dependent, independent (predictor) and collateral variable. Inter-group and intra-group experiments, their advantages and pitfalls. Quasiexperiment.

- **Behavorial methods**

General limitations of experiments involving behavorial methods. The connection between variables available for control and the domain of the study: comparing their use in speech comprehension vs. production. Methods and examples of experimental studies: repeating after the supervisor, carrying out instructions, lexical and grammatical decision tasks, self-paced reading, picture description tasks, referential studies of dialogue or narrative structure. Analysis of experimental logs: general design, selecting predictors and objectives of the experiment.

- **Eye-tracking**

Types of eye movement. What eyes can tell us about higher psychic processes. Yarbus' studies. Connecting eye movement to cognitive processes (eye-mind hypothesis). Advantages of eye-tracking approaches to linguistic phenomena. Visual world paradigm. Eye-tracking studies of reading. Dependent variables in the analysis of eye-tracking data. Main problems in conducting eye-tracking experiments.

- **Experimental studies of morphology**

Experimental studies focusing on morphological structure(s) in the context of field research of under-described minority or endangered languages. Considering experimental conditions in field environment.

5. Reading List

1. Поппер К. Р. Введение в логику науки // В кн.: Логика научного исследования. Избранные работы / К. Р. Поппер. Пер. с англ. В. Н. Брюшинкина и др.; Под общ. ред. В. Н. Садовского. М.: Республика, 2004. С. 24-53.

2. Huettig F., Rommers J., Meyer A.S. Using the visual world paradigm to study language processing: A review and critical evaluation // Acta Psychologica. 2011. Vol. 137. P. 151-171.

3. Dronkers, N. F., Ivanova, M., & Baldo, J. V. (2017). What Do Language Disorders Reveal about Brain–Language Relationships? From Classic Models to Network Approaches. Journal of the International Neuropsychological society, 23, 741-754.

4. Spivey M., Tanenhaus M. Syntactic Ambiguity Resolution in Discourse: Modeling the Effects of Referential Context and Lexical Frequency // Journal of Experimental Psychology: Learning, Memory, and Cognition. 1998. Vol. 24. No. 6. P. 1521-1543.

5. Indefrey, P., & Levelt, W. J. M. (2004). The spatial and temporal signatures of word production components. *Cognition*, *92*(1–2), 101–144.

6. Grading System

Grading system is based on cumulative grading of quizzes (all students) and home works. The final grade is calculated as 0,7 of the cumulative grade and 0,3 of the oral exam grad.

7. Methods of Instruction

Methods of instruction include lectures and seminars. The seminars include demonstration of software and euetracking equipment, as well as discussion of papers and homework.

8. Special Equipment and Software Support

a. Linger software
b. Eyetracker Eye-Link 1000