Experimental Studies of the Grammar

1. Course Description

a. Title of a Course
Experimental Studies of the Grammar

b. Pre-requisites
Introduction to Linguistics

c. Course Type (compulsory, elective, optional)
Elective

d. Abstract
The course is dedicated to experimental studies of syntax and morphology. It will cover the most important models of language production and processing and will show how experimental data can be used in theoretical linguistics to tease different theories apart. We will also consider several discussions that play an important role not only in linguistics, but also in other cognitive sciences, including the problem of modularity, innateness, the competence-performance distinction and the psycholinguistic adequacy of linguistic models. Several lectures will be dedicated to first and second language acquisition and clinical studies. The course will cover a variaty of behavioral and neuroimaging methods (including lexical decision task, cross-modal priming, self-paced reading, eye-tracking while reading, visual world paradigm, EEG and fMRI experiments). The students will conduct one experiment, paying attention to all crucial steps: selecting the design and creating materials, learning how to use experimental software, analyzing the results and interpreting them.

2. Learning Objectives

Learning objectives of the course "Experimental Studies of the Grammar" are to introduce students to:
- most prominent models of language production and comprehension;
- experimental methods used in the psycho- and neurolinguistic studies of syntax and morphology;
- ideas how experimental materials can be used to evaluate different hypotheses formulated in theoretical linguistics.

3. Learning outcomes

After completing the study of the discipline "Experimental Studies of the Grammar" students should:
- know most prominent models of language production and comprehension;
- understand experimental methods used in the psycho- and neurolinguistics;
- know experimental studies in several linguistic domains (long-distance dependencies, anaphora, agreement etc.);
- understand special features of experimental studies of the grammar in ontolinguistics and clinical linguistics;
- be able to apply this knowledge when planning his or her own experimental studies and evaluating other studies.

4. Course Plan

1. Major theoretical questions in the experimental study of language.
Different approaches to the competence vs. performance distinction, psycholinguistic adequacy of the grammar, the problems of modularity and its repercussions in psycholinguistics, the idea of innateness and its role in child language acquisition experiments.

2. An overview of behavioral and neurolinguistic experimental methods.
Behavioral methods including questionnaires, lexical decision task, self-paced reading, cross-modal priming, eye-tracking while reading, visual world paradigm. Neurolinguistic methods including EEG / MEG, PET, fMRI. How do we choose the right method for an experiment?

3. Mental grammar in comprehension: major parsing models.
Early models relying on heuristic strategies. Subsequent evidence suggesting that different types of information (syntactic, lexical, semantic, contextual) are taken into account during the earliest stages of paring. Contemporary approaches: interactionist and weakly modular.

4. Mental grammar in production: major generation models.
Types of data production studies rely on (error analysis, elicited production etc.). Models with and without stages. Experimental evidence in favor of the former. Levelt's (1999) model in more detail. Feedback loops in production.

5. Mental lexicon.
An overview of existing approaches with an emphasis on morphologically complex words and forms. Which words and forms undergo morphological decomposition and which are stored as a whole? Can these two routes be combined? Does morphological regularity play any role in it?

6. Case studies: long-distance dependencies.
Experimental evidence from various sources demonstrating the psycholinguistic reality of long-distance dependencies. Data that let us tease apart different approaches to long-distance dependences (the presence/absence of movement/internal merge and traces/copies). Different experimental profiles for different types of dependencies.

7. Case studies: agreement (number, gender, case).
Agreement attraction errors as a window into the process of agreement during production and comprehension. Representational and retrieval-based approaches. Hierarchies of feature values and the problem of markedness. Subject-predicate agreement and semantics.

8. One experiment from the beginning to the end: running a self-paced reading study.
Creating experimental stimuli (estimating their number, balancing factors, deciding on the nature and quantity of fillers etc.), programming an experiment, collecting data, analyzing data (excluding outliers, performing statistical analysis), interpreting the result.

9. Specialized methods to assess children's syntax and morphology
Various pitfalls one must avoid conducting experiments with children. Truth-value judgment task, act-out task. Several domains where children's performance was different from adults' perforance, figuring out the reasons (different grammars vs. different processing abilities etc.).

10. Comprehension and production in Broca's aphasia: an interaction of theory and experiment.
From the early ideas that Broca's area is responsible for language production and Wernicke's area for comprehension, attempts to give a more precise answer to this question relying on more or more sophisticated ideas about brain and about language. Various constructions that are difficult to produce and comprehend for Broca's aphasiacs and how this depends on the task and context.

5. Reading list

a. Textbooks

Traxler, M. Introduction to Psycholinguistics: Understanding Language Science. Cambridge: Wiley-Blackwell, 2011 [separate chapters] — URL: https://ebookcentral.proquest.com/lib/hselibrary-ebooks/detail.action?docID=697786 — ЭБС ProQuest Ebook Central - Academic Complete.

Handbook of Psycholinguistics / Ed. by Traxler, M.J., Gernsbacher, M.A. 2nd ed. Amsterdam: Academic Press, 2006 [separate chapters] — URL: https://ebookcentral.proquest.com/lib/hselibrary-ebooks/detail.action?docID=282022 — ЭБС ProQuest Ebook Central - Academic Complete.

b. Additional reading

Ahlsén E. Introduction to Neurolinguistics. Amsterdam: John Benjamins, 2006 — URL: https://ebookcentral.proquest.com/lib/hselibrary-ebooks/detail.action?docID=622715 — ЭБС ProQuest Ebook Central - Academic Complete.

Bock, K., Miller, C.A. Broken agreement // Cognitive Psychology. 1991. Vol. 23. P. 45-93.

Ni, W., Crain, S., & Shankweiler, D. Sidestepping garden paths: assessing the contributions of syntax, semantics and plausibility in resolving ambiguities // Language and Cognitive Processes. 1996. Vol. 11. P. 283-334.

Wagers, M.W., Lau, E.F., Phillips, C. Agreement attraction in comprehension: representations and processes // Journal of Memory and Language. 2009. Vol. 61. P. 206-223.

6. Grading system

Type of grading	Type of work	module 3	Characteristics
Continuous	Assigned reading		Reading tasks for seminars.
	Home works	2	Two tasks connected with conducting an experiment, analyzing experimental data.
	Class participation		Discussion of reading assignments and collected experimental data.
	Written test	1	A short test designed to make sure that students remember important details from previous lectures and seminars.
Final	Exam		Oral discussion of the topics of the course.

Continuous assessment: students have to demonstrate their acquaintance with the basic facts, concepts, notions, and theories in the domain of language production and comprehension. By

the end of the course students are expected to be able to apply their knowledge in their independent work on topics in linguistics.

Final assessment: students have to demonstrate the knowledge of the basic facts, their command of analysing problems using methods of experimental linguistics, and their ability to understand and interpret these problems.

7. Guidelines for Knowledge Assessment

Cumulative grade (G_c) for the student's work during the module(s) consists of lecturer's assessment of the student's work during seminars (presence, participation, quality and quantity of answers) (G_p), and the mean scores for homework assignments (G_h).

$G_c = G_p + G_h,$
where G_p = 0.33, and G_h = 0.66.

The finale grade (G_f) is the sum of cumulative grade (G_c) and the final assessment (exam) mark (G_e):

$G_f = G_c + G_e$
where G_c = 0.6 and G_e = 0.4.

The grades are rounded in favour of the student.

Table of Grade Accordance

Ten-point Grading Scale	Five-point Grading Scale	
1 - very bad 2 – bad 3 – no pass	no pass – 2	**FAIL**
4 – pass 5 – highly pass	pass – 3	**PASS**
6 – good 7 – very good	good – 4	
8 – almost excellent 9 – excellent 10 – perfect	excellent – 5	

During *the re-examination*, the student has no possibility of obtaining additional mark to raise the grade for current or mid-term assignments. The resulting grade for the course counts towards the certificate of Master's degree.

8. Methods of Instruction

Lectures, seminars (including discussions, learning and applying different methods of analysis) and out-of-class work (under the guidance of the lecturer; it is possible to consult with the lecturer via the LMS system or by e-mail). In-class work: 60% or more should be interactive (working in groups, team discussions).

9. Special Equipment and Software Support

The course requires a laptop, projector, and acoustic systems.

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