
Stupina Ekaterina

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EDUCATION

National Research University Higher School of Economics, Moscow (Russia)

Master's degree with honors

Cognitive Sciences and Technologies

Sep 2015 - Jun 2017

Thesis title: Automaticity in Lexical Access: Eye-tracking Investigations

Advisor: Yury Y. Shtyrov, Andriy V. Myachykov

Lomonosov Moscow State University, Moscow (Russia)

Bachelor's degree

Theoretical and Applied Linguistics

Sep 2011 - Jun 2015

Thesis title: Speaker identification in whispered speech: experimental-phonetic study

Advisor: Olga V. Krivnova

RELEVANT EXPERIENCE

RESEARCH

National Research University Higher School of Economics, Moscow (Russia)

Center for Language and Brain

Nov 2018 - PRESENT: *Junior Research Fellow*

Sep 2016 - Oct 2018: *Research Assistant*

Current Research:

- Project title: ***Grammatical gender interference in L2***
 - I am writing up the first experiment of the proposed PhD project.
- Project title: ***Preoperative and acute postoperative language status in epileptic patients undergoing anterior temporal lobectomy: insights from tractoraphy***
 - I have analyzed the data of the pilot sample. This data will be presented at two international conferences in 2019
 - I am currently gathering and processing more data.
 - Methods: diffusion-tensor imaging, MRI, behavioral data)
- Project title: ***Development and application of the Russian Aphasia Test***
 - I am developing an Android application (language assessment test battery) to be used in a clinical setting by speech pathologists. I do the programming part.
- Project title: ***A study of the role of phoneme representations in speech comprehension***
 - I am currently validating the stimuli for the study.

Previous projects:

- **Project title:** *Language impairments and their neuroanatomical correlates in patients after brain tumor resection and The role of white-matter tracts in language processing: Diffusion tensor imaging data of individuals with neurogenic language disorders.*
 - Performed statistical analysis of DTI (diffusion-tensor imaging), MRI (magnetic resonance imaging) and behavioral data (language tests)
 - Processed and visualized white-matter pathways (DTI: diffusion-tensor imaging) associated with language in 50+ patient's
 - Delineated lesions (tumours, epileptogenic foci, surgical resection sites) on structural MRI scans in 50+ patients
 - Performed language testing before, during and after the surgery in patients with tumours or epileptic foci: 30+ surgeries
- **Project title:** *Language test for speech mapping in neurosurgery.*
 - Developed and normalized 2 language tests for fMRI language localizer and intraoperative language testing

May 2016: *Intern*

- Learnt **voxel lesion-symptom mapping** method (VLSM), which is used to identify the lesion sites associated with behavioural impairments. Delineated T1 MRI scans of 22 post-stroke patients.

TEACHING

- Taught **Experimental methods in psycho- and neurolinguistics** (09.2019-10.2019) at the Faculty of Humanities (Higher School of Economics). Delivered and prepared lectures, conducted seminars and administered the exam.
- **Teaching Assistant** at the Faculty of Psychology (Higher School of Economics). Two courses: **Behavioral Neuroscience** (09.2016-12.2016) and **Neuroscience** (01.2017-03.2017). I prepared and graded the tests.
- **Intraoperative language assessment training**
 - Over the course of two years (2017-2018) I have instructed circa 10 linguists who now perform intra- and perioperative language testing in neurosurgical patients: in Moscow, Nizhny Novgorod, Novosibirsk and Saint Petersburg. The training involved explanation and guidance on the
 - Organized and prepared a one-day **workshop «Лингвистическое сопровождение операций с пробуждением»** at Center for Language and Brain (HSE, Moscow), which was attended by 10+ participants. *August 7, 2018*
 - Talks **“The role of linguists during awake surgeries”, “Preoperative and intraoperative language assessment”**. Seminar at HSE Campus in Nizhny Novgorod. Nizhny Novgorod, Russia. *October 17, 2017.*
 - Talk **“The role of linguists during awake surgeries”**. Workshop on “Resection of neoplasms in eloquent brain areas” at the National Medical and Surgical Center named after N.I. Pirogov. Moscow, Russia. *September 20-22, 2017.*

- **Tractography workshop**
 - A hands-on minicourse on DTI processing at the Center for Language and Brain. 4 classes (April 1-24, 2019). I was the only instructor and organizer. Topics discussed during the course:
 - 1 Hands-on seminar: Preprocessing steps in FSL and ExploreDTI
 - Lecture: The basics of DWI and DTI: image acquisition, DWI and DTI physics, main measures (FA, MD, Dr, Da)
 - 2 Hands-on seminars: Drawing “Language” tracts in TrackVis
 - A hands-on workshop on DTI data processing and tract reconstruction. Organized and presented at the workshop (December 10, 2018)
- Invited talks (3 lectures) on **Neurolinguistics** (*Neuroanatomy and Neurophysiology, Methods of Neurolinguistics, Aphasia*) at a master’s level course “**Experimental linguistics**”, taught at the Faculty of Humanities at the Higher School of Economics (Moscow). January, 2018

PUBLICATIONS

ARTICLE

1. **Stupina E.**, Myachykov A., Shtyrov Y. **Automatic Lexical Access in Visual Modality: Eye-Tracking Evidence** // *Frontiers in Psychology*. 2018. Vol. 9. P. 1-10. doi: [10.3389/fpsyg.2018.01847](https://doi.org/10.3389/fpsyg.2018.01847) (*SCOPUS и WOS*)

CONFERENCE PROCEEDINGS

2. Крейчи С. А., Кривнова О. Ф., **Ступина Е. А.** **Проблема идентификации диктора в условиях шепотной речи** // В кн.: Компьютерная лингвистика и интеллектуальные технологии: По материалам ежегодной международной конференции «Диалог» (Москва, 1–4 июля 2016 г.) / Под общ. ред.: В. Селегей. Вып. 15. М. : Изд-во РГГУ, 2016. С. 315-325. (*SCOPUS*)
3. **Stupina E.**, Artemova A., Zhirnova V., Zyryanov A., Zuev A., Pedyash N., Bronov O., Kopachev D., Dragoy O. **Predictors of postoperative language outcome in epileptic patients undergoing anterior temporal lobectomy** // *Neurobiology of Speech and Language Proceedings of the 3rd International Conference*. Edited by Olga Shcherbakova. 2019. С. 103-104.
4. Zyryanov A., Maljutina S., **Stupina E.**, Karpychev V., Gordeyeva E., Zhirnova V., Artemova A., Zelenkova V., Tolkacheva V., Zuev A., Pedyash N., Bronov O., Kopachev D., Pronin I., Dragoy O. **The role of major associative white matter pathways in language processing** // *Neurobiology of Speech and Language Proceedings of the 3rd International Conference*. Edited by Olga Shcherbakova. 2019. С. 78-79.
5. **Stupina E.A.**, Zyryanov A.S., Chernov S., Chernova M., Gordeeva E.A., Gunenko G., Tolkacheva V.A., Zhirnova V.A., Zuev A., Dragoy O.V. **The pattern of language deficits in neurosurgical patients** // В кн.: Восьмая международная конференция по когнитивной науке: Тезисы докладов. Светлогорск: Институт психологии РАН, 2018. P. 952-955. (*РИНЦ*)

6. Малютина С. А., **Ступина Е. А.**, Драгой О. В., Гордеева Е. А., Зырянов А. С., Копачев Д., Толкачева В. А., Пронин И., Иванова М. **Роль трактов левого полушария в речевой деятельности: дооперационные данные диффузионно-тензорной томографии пациентов с опухолями головного мозга** // В кн.: Восьмая международная конференция по когнитивной науке: Тезисы докладов. Светлогорск: Институт психологии РАН, 2018. С. 680-682. (РИНЦ)
7. Драгой О.В., Крабис А.В., **Ступина Е.А.**, Толкачева В.А. **Интраоперационная лингвистическая батарея для картирования речи во время краниотомий в сознании** // В кн.: Когнитивная наука в Москве: новые исследования. Материалы конференции 15 июня 2017 г., 2017. С. 501-504. (РИНЦ)
8. Малютина С.А., Гордеева Е.А., Толкачева В.А., **Ступина Е.А.**, Зырянов Е.А., Драгой О.В., Копачев Д.Н., Пронин И.Н., Иванова М.В. **Речевые нарушения при поражении левого дугообразного пучка после нейрохирургического вмешательства: Анализ единичного случая.** // Всероссийская конференция по когнитивной науке КИСЭ-2017: материалы Всероссийской конференции (Казань, 30 октября – 3 ноября 2017 г.). С. 141-147. (РИНЦ)
9. Малютина С.А., Драгой О.В., Гордеева Е.А., Зырянов А.С., Копачев Д.Н., **Ступина Е.А.**, Толкачева В.А., Пронин И.Н., Иванова М.В. **The role of white-matter tracts in language processing in patients with brain tumors** // 10th Annual Meeting of the Society for Neurobiology of Language, August 16-18, 2018, Quebec City, Canada. Abstracts. P. 128-129
10. Dragoy O., Kuptsova S., Canessa N., Zinchenko V., **Stupina E.**, Petrushevsky A., Fedina O., Coppa S. **The contribution of corpus callosum to lateralization of the resting state language network** // Stem-, Spraak- en Taalpathologie. 2018. No. 22. P. 127-129.
11. Зырянов А.С., Гордеева Е.А., **Ступина Е.А.**, Толкачёва В.А., Жирнова В.А. **Речевые нарушения у пациентов до и после нейрохирургического вмешательства в доминантное полушарие головного мозга** // IV Студенческая конференция Института лингвистики (СКИЛ). Сборник материалов.

CONFERENCES

ORAL PRESENTATIONS

1. **Нейролингвистическое сопровождение операций в сознании.** Международный образовательный курс "Хирургия эпилепсии с мастер-классом по анатомии и диссекции белого вещества головного мозга", June 27-29, 2018, Tyumen, Russia.
2. **Роль исследований нейрохирургической популяции в изучении мозговых основ языка.** IV Междисциплинарная студенческая конференция «Интеллектуальный город: наука как искусство», April 18-19, 2018, Nizhny Novgorod, Russia.
3. **Речевые нарушения при поражении левого дугообразного пучка после нейрохирургического вмешательства: Анализ единичного случая.** Всероссийская конференция по когнитивной науке: "Когнитивные исследования на современном этапе", October 30 – November 3, 2017, Kazan, Russia. [Abstract published]
4. **Проблема идентификации диктора в условиях шепотной речи.** Компьютерная лингвистика и интеллектуальные технологии «Диалог 22», June 1-4, 2016, Moscow, Russia. [Conference paper published]

POSTERS

5. **Language outcome after anterior temporal lobectomy: insights from tractography.** Society for the Neurobiology of Language, August 20-22, 2019, Helsinki, Finland
6. **Do we need phonemes in speech perception? An auditory selective adaptation study.** The 25th architectures and mechanisms of language processing conference, September 6-8, 2019, Moscow, Russia
7. **The effect of L1 grammatical gender on the acquisition of grammatical gender in a novel language.** Symposium "Bilingualism and cognition" (Satellite symposium to The 25th architectures and mechanisms of language processing conference), September, 5, 2019, Moscow, Russia
8. **Predictors of postoperative language outcome in epileptic patients undergoing anterior temporal lobectomy.** 3rd International conference "Neurobiology of Speech and Language", May 31 - June 5, 2019, Saint Petersburg, Russia *[Abstract published]*
9. **The pattern of language deficits in neurosurgical patients.** VIIIth International Conference on Cognitive Science, October 18-21, 2018, Svetlogorsk, Russia. *[Abstract published]*
10. **Automatic lexical access in visual modality: Eye-tracking evidence.** The 10th Annual Embodied and Situated Language Processing Conference, September 10-12, 2017, Moscow, Russia.
11. **Limitations of object naming task for intraoperative language mapping: report of two clinical cases.** "Neurobiology of Speech and Language" workshop, October, 27-29, 2017, Saint Petersburg, Russia.
12. **Mechanisms of attentional control in automatic lexical access.** Third annual Summer School "Aphasia, Assessment, Treatment and Recovery", July, 2-4, 2016-, Moscow, Russia

CO-AUTHORED (w/o attendance)

13. **Functional specificity of the left frontal aslant tract: evidence from intraoperative language mapping.** 14th European Low Grade Glioma Meeting, May, 14-15, 2019, London, UK
14. **The role of major associative white matter pathways in language processing.** 3rd International conference "Neurobiology of Speech and Language", May 31 - June 5, 2019, Saint Petersburg, Russia *[Abstract published]*
15. **Речевые нарушения и их нейроанатомические корреляты у пациентов с опухолью головного мозга.** Конференция "Наука будущего" и форум "Наука будущего - наука молодых", May, 14-17, 2019, Sochi, Russia
16. **Роли отдельных сегментов дугообразного пучка в обеспечении языковой обработки.** Пятая конференция «Когнитивная наука в Москве: новые исследования», June 19, 2019, Moscow, Russia
17. **Функциональная специфичность левого лобного косо́го пучка.** Пятая конференция «Когнитивная наука в Москве: новые исследования», June 19, 2019, Moscow, Russia
18. **Функциональное интраоперационное картирование левой височной доли: Задание имеет значение.** Пятая конференция «Когнитивная наука в Москве: новые исследования», June 19, 2019, Moscow, Russia

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19. **Роли ассоциативных трактов белого вещества в обеспечении речевой деятельности.** Международный молодежный научный форум «Ломоносов-2019, April 11-12, 2019, Moscow, Russia
 20. **The role of white-matter tracts in language processing in patients with brain tumors.** The Tenth Annual Meeting of the Society for the Neurobiology of Language, August 16-18, 2018, Quebec, Canada. [*Abstract published*]
 21. **Роль проводящих путей в речевых функциях у пациентов с опухолями головного мозга.** VIIIth International Conference on Cognitive Science, October 18-21, 2018, Svetlogorsk, Russia. [*Abstract published*]
 22. **Речевые нарушения у пациентов до и после нейрохирургического вмешательства в доминантное полушарие головного мозга.** Студенческая конференция института лингвистики РГГУ, April 12-13, 2018, Moscow, Russia. [*Conference paper in press*]
 23. **The contribution of corpus callosum to lateralization of the resting state language network.** Science of Aphasia, September 11-14, 2017, Geneva, Switzerland. [*Abstract published*]
 24. **Интраоперационная лингвистическая батарея для картирования речи во время краниотомий в сознании.** Когнитивная наука в Москве: новые исследования, June 15, 2017, Moscow, Russia. [*Abstract published*]

EXTRA TRAINING

COURSES

1. **Online specialization “Applied Data Science with Python”** by University of Michigan at [Coursera](#). Consists of 5 courses: **Introduction to Data Science in Python, Applied Plotting, Charting & Data Representation in Python, Applied Machine Learning in Python, Applied Text Mining in Python, Applied Social Network Analysis in Python.** April 11, 2017
2. **The international Bootcamp on quantitative methods in L2 research.** June 10-15, 2019 (Warsaw, Poland).
3. **Course “Writing a draft for Publication”**, 36 hours, Academic Writing Centre (HSE). October 16 - December 11, 2018 (Moscow, Russia).
4. **Hands-on Workshop in Brain Anatomy and Dissection.** June 27-28, 2018 (Tyumen, Russia).
5. **Course "Clinical fMRI & DTI – Theory and Practice".** June 15-17, 2017 (Porto, Portugal)

CONFERENCE ATTENDANCE (w/o presentations)

6. **The 29th conference of the European Second Language Association, EuroSLA 29.** August, 28-31 (Lund, Sweden)
7. **Conference on Multilingualism (COM) 2018.** December 16-18, 2018 (Ghent, Belgium)
8. **First Winter Neurolinguistics School: "Aspects of Bilingualism: neuro-, psycho- and sociolinguistic approaches to bilingual studies".** November 21-23, 2018 (HSE, Moscow, Russia)
9. **Advanced Eye Tracking Workshop.** October 25-26, 2018 (HSE, Moscow, Russia)
10. **Second International Workshop "Neurobiology of speech and language".** September 28-29, 2018 (Saint Petersburg, Russia)
11. **Conference Learning Language in Humans and in Machines** (Olivier Legrain Science and Society Conference 2018). July 5-6, 2018 (Paris, Russia)

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12. **Symposium "European Low Grade Glioma Network (ELGGN) Meeting"**. June 22-23, 2018 (Lisbon, Portugal)
 13. **Fifth Summer Neurolinguistics School: "Brainwaves of Language: Neural Oscillations and Language Processing"**. May 21-23, 2018 (HSE, Moscow, Russia)
 14. **Summer Neurolinguistics School "Brain Stimulation in Language Research and Therapy"**. June 22-24, 2017 (HSE, Moscow, Russia)
 15. **Summer Neurolinguistics School "Aphasia Assessment, Treatment and Recovery"**. July 2-4, 2016 (HSE, Moscow, Russia)

ADDITIONAL SKILLS

LANGUAGES

- English: Level: C2 - IELTS Academic 8.5/9 (16.12.2017)
- Other: Russian - native, Spanish - ~B1, French and Finnish - ~A1

RESEARCH TECHNIQUES

- Behavioral methods
- Eye-tracking
- DTI and structural MRI analyses

PROGRAMMING AND DATA PROCESSING

- **Python** (PsychoPy, Pandas, NumPy, Matplotlib, Django) + **JavaScript, HTML, CSS**:
 - Perform data analysis using Python for my experiments
 - Run experiments using PsychoPy
 - Developed three websites [[1 is accessible now](#)] for online stimuli validation
- **Java**:
 - I am currently developing an Android application for [Russian Aphasia Test](#) - aphasia test battery for clinical use
- **R**:
 - Visualization and statistical analyses
- **DTI and MRI** processing software: FSL, SPM, Explore DTI, ITK-SNAP
- **Other**: Matlab (Psychtoolbox-3), Excel, SPSS

GRANTS

1. Russian Foundation for Basic Research (РФФИ) N°18-012-00829 A
 - Duration: 2018-2021
 - Investigator
 - Project title: **Нарушения речи и их нейроанатомические корреляты у пациентов после резекции опухолей головного мозга**
2. Russian Foundation for Basic Research (РФФИ) N°16-06-00400 A
 - Involved: 2017-2018 (overall grant duration: 2015-2017)
 - Investigator

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- Project title: ***Роль проводящих путей головного мозга в обеспечении речевой деятельности: данные диффузионно-тензорной томографии у пациентов с очаговыми поражениями***