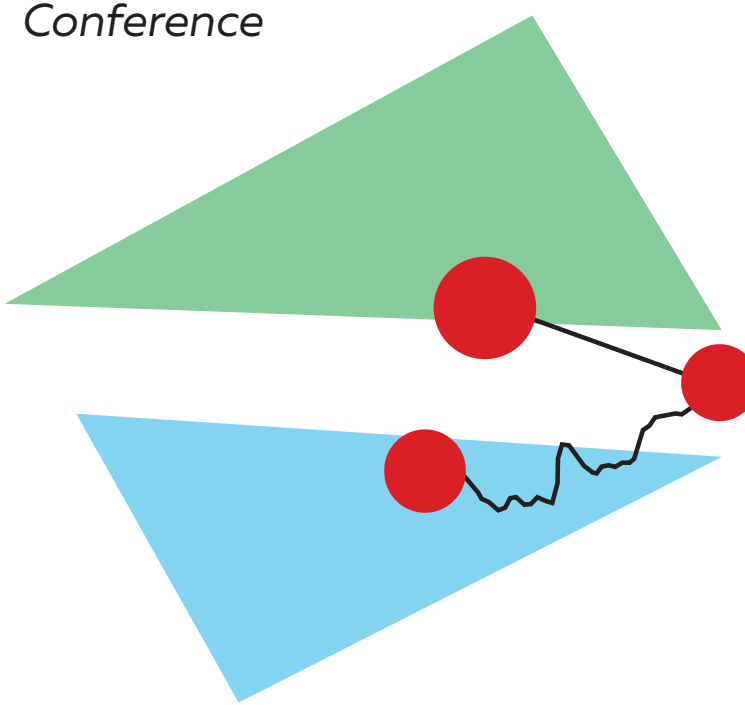
Conference Program

NEUROBIOLOGY OF SPEECH AND LANGUAGE

4th International Conference



November 13 –14 2020

Saint Petersburg
Russia

Dear colleagues,

This is my great pleasure to welcome you to the 4th International Conference on Neurobiology of Speech and Language organized by the Laboratory of Behavioural Neurodynamics at the Faculty of Psychology of Saint Petersburg State University. This extraordinary year of 2020 seems to be the most inappropriate time for any big international event: the borders are closed, universities have switched to remote teaching, academics prefer staying home and safe instead of attending conferences and meetings. We prioritize safety too. But we have also decided to keep the line-up of annual NBSL conferences uninterrupted despite all the COVID-19 challenges. This is why this time we go online and, like many other colleagues, explore new tools and try new formats. However, the scientific program of our conference remains traditionally rich and varied as it covers many facets of the neurobiology and psychology of speech and language, including second language acquisition and development, brain processes and structures underlying language and other symbolic systems, such as music. We are honored to have Prof. Mari Tervaniemi (Finland), Prof. Kira Gor (USA), and Dr. Olga Dragoy (Russia) as the keynote speakers of the NBSL2020, whose talks promise to provide the most exciting and fruitful context for new ideas, insights and the beginnings of future collaborations between all the conference members! Stay safe and enjoy the conference!

Olga Shcherbakova

On behalf of all Organizing Committee

Organizing Committee:

Chair of the Committee:

Olga Shcherbakova (SPbSU)

Members of the Organizing Committee:

Yury Shtyrov (SPbSU; Aarhus University; HSE)
Ekaterina Perikova (SPbSU)
Varvara Averyanova (SPbSU)
Ekaterina Andriushchenko (SPbSU)
Ekaterina Blinova (SPbSU)
Aleksander Kirsanov (SPbSU)

web page:
http://cogneuro.spbu.ru

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November, 13th

9.30–11.00

ONLINE REGISTRATION
(via ZOOM)

11.00–11.15

WELCOME AND INTRODUCTION

11.15–12.45

KEYNOTE LECTURE:

Music and speech: Two facets of auditory cognition and their interplay (pre-recorded, Q + A in live format)

Prof. Mari Tervaniemi
University of Helsinki, Finland

12.45–14.00

SLIDE SESSION 1

14.00–14.45

BREAK

14.45–16.00

SLIDE SESSION 2

16.00–18.00

FLASH TALKS SESSION 1
(bring your own snacks and wine)

18.00–19.30

KEYNOTE LECTURE:

Fuzzy nonnative lexical representations

Prof. Kira Gor
University of Maryland, USA

November, 14th

10.00–11.00

ONLINE REGISTRATION
(via ZOOM)

11.00–12.15

SLIDE SESSION 3

12.15–12.30

BREAK

12.30–13.30

SLIDE SESSION 4

13.30–14.15

BREAK

14.15–16.30

FLASH TALKS SESSION 2
(bring your own snacks and wine)

16.30–18.00

KEYNOTE LECTURE:

Language pathways: The role of white-matter tracts in language processing

Dr. Olga Dragoy

Higher School of Economics, Moscow, Russia

18.00– …

CLOSING REMARKS

Music and speech: Two facets of auditory cognition and their interplay

Prof. Mari Tervaniemi

University of Helsinki, Finland

During past decades, our knowledge about the brain functions and structures underlying music perception, performance, and emotions has accumulated relatively quickly. However, much less is known about the brain determinants underlying music learning and music rehabilitation. The lack of systematic knowledge is particularly obvious when we consider the interaction between music and language functions. In my contribution, I will illuminate the effects of music learning on brain functions in childhood and adolescence. In this context, also the transfer effects of music in other domains of cognitive development will be discussed. Furthermore, I will show results from studies of music rehabilitation obtained from neurological patients. Taken together, these data indicate that music can be learnt across the whole life span, and, further, that it can be used to facilitate some transfer effects in development as well as enrich neurorehabilitation in a highly versatile manner.

Fuzzy nonnative lexical representations

Prof. Kira Gor

University of Maryland, USA

While it is widely recognized that, on average, second language (L2) speakers know fewer words than native (L1) speakers, the actual properties of L2 lexical representations are still insufficiently understood. The memory-based approaches argue that L2 speakers rely on a different kind of memory unique to L2 for storage and access of L2 words (Jiang & Forster, 2001; Qiao & Forster; 2017; Witzel & Forster, 2012). The episodic L2 hypothesis (Jiang & Forster, 2001) identifies episodic memory as the only type of memory operating in L2 lexical processing. This reliance only on episodic representations of L2 words is in contrast with L1 lexical processing that relies on the complementary learning systems, episodic and lexical/semantic (Lindsay & Gaskell, 2010).

According to the fuzzy representations-based hypothesis (Gor, under review), less familiar L2 words, either newly acquired or stored in long-term memory, are not robustly encoded: they are characterized by fuzzy forms, meanings, and form-meaning mappings. In this talk, I will review several pieces of evidence in support of fuzzy L2 lexical representations (Bordag, Kirschenbaum, Rogahn, Opitz, & Tschirner, 2017; Cook, Pandža, Lancaster, & Gor, 2016; Gor & Cook, 2020) and discuss the implications of fuzziness for different aspects of word recognition: lexical competition and lexical confusions leading to the retrieval of incorrect lexical items.

Language pathways: The role of white-matter tracts in language processing

Dr. Olga Dragoy

Higher School of Economics, Moscow, Russia

Cognitive processes are traditionally referred to as higher cortical functions, stressing the central role of cerebral cortex in cognition. However, modern neuroscience considers cognition as of a dynamic, interactive and multimodal nature, relying on a distributed network of both cortical and subcortical brain regions. An apt example is language: white-matter connections are exactly what makes linguistic processing interactive, regarding both an interplay among different aspects of language and its communication with other, non-linguistic, cognitive functions. I will present a recent evidence on such cross-domain interactive nature of language processing and the pivotal role of white-matter tracts in it. These are data obtained using tractography imaging and direct electrical stimulation during awake craniotomies in tumor patients and voxel-based lesion-symptom mapping analysis in individuals with stroke.

12.45–14.00

SLIDE SESSION 1

1. (Non)existence of zero morpheme: ERP evidence

Maria Alekseeva[1], Andriy Myachykov[1,2], Yury Shtyrov[1,3,4]

[1] National Research University Higher School of Economics

[2] Northumbria University at Newcastle

[3] Saint Petersburg State University

[4] Aarhus University

2. Do clothes make the man? Transposed-letter effects with logos

Ana Baciero[1], Manuel Perea[1,2], Francisco Rocabado[1], Ana Marcet[2]

[1] Nebrija University

[2] University of Valencia

3. Handling two writing systems in the bilingual brain: ERP investigation

Beatriz Bermúdez Margaretto[1], Grigory Kopytin[1], Andriy Myachykov [1,2], Yury Shtyrov [1,3,4]

[1] National Research University Higher School of Economics

[2] Northumbria University at Newcastle

[3] Saint Petersburg State University

[4] Aarhus University

4. Does color modulate masked identity priming? Evidence from lexical decision

María Fernández-López[1], Manuel Perea[1,2], Marta Vergara-Martínez[1]

[1] University of Valencia

[2] Nebrija University

5. Contextual acquisition of novel words: Interactions with verbal abilities, motivation, ambiguity tolerance and neural dynamics

Nadezhda Mkrtychian[1], Svetlana Kostromina[1], Evgeny Blagovechtchenski[1], Daria Gnedykh[1], Diana Kurmakaeva[1], Yury Shtyrov[1,2,3]

[1] Saint Petersburg State University

[2] Aarhus University

[3] National Research University Higher School of Economics

14.45–16.00

SLIDE SESSION 2

1. Development of phonological and orthographic parafoveal processing during reading in Russian

Vladislava Staroverova[1], Nina Zdorova[1], Anastasiya Lopukhina[1]

[1] National Research University Higher School of Economics

2. Anodal tDCS over Broca's area improves learning of novel vocabulary

Ekaterina Perikova[1], Evgeny Blagovechtchenski[1], Margarita Filippova[1], Olga Shcherbakova[1], Alexander Kirsanov[1], Ekaterina Andriushchenko[1], Ekaterina Blinova[1], Yury Shtyrov[1,2,3]

[1] Saint Petersburg State University

[2] Aarhus University

[3] National Research University Higher School of Economics

3. First dyslexic font in Russian: Evidence of efficiency and new questions

Svetlana Alexeeva[1], Vladislav Zubov[1]

[1] Saint Petersburg State University

4. Processing of words and pseudowords in the thalamus and the subthalamic nucleus

Anna Chrabaszcz[1,2], Dengyu Wang[3], Witold J. Lipski[1], Alan Bush[4], Julie A. Fiez[1], R. Mark Richardson[4]

[1] University of Pittsburgh

[2] National Research University Higher School of Economics

[3] Tsinghua University

[4] Massachusetts General Hospital

5. Individual differences in prior knowledge application during word learning: A mechanistic Bayesian model

Hannah Marlatte[1], Jed Meltzer[1], Malcolm Binns[1], Asaf Gilboa[1]

[1] Rotman Research Institute

11.00–12.15

SLIDE SESSION 3

1. Active learning of pseudoword-movement association is paralleled by enhanced post-movement beta oscillations

Anna Pavlova[1,2], Nikita Tyulenev[1], Valeriya Skavronskaya[1], Vera Tretyakova[1], Anastasia Nikolaeva[1], Andrey Prokofyev[1], Boris Chernyshev[1], Tatiana Stroganova[1]

[1] Moscow State University of Psychology and Education

[2] National Research University Higher School of Economics

2. Can we identify a word by its upper half? ERP correlates of letter degradation during word recognition

Marta Vergara-Martínez [1], María Fernández-López [1], Montserrat Comesaña[2], Manuel Perea[1,3]

[1] University of Valencia

[2] University of Minho

[3] Nebrija University

3. Differential effects of tDCS of Wernicke's area and its right-hemisphere homologue on contextual acquisition of novel words

Daria Gnedykh[1], Diana Kurmakaeva[1], Nadezhda Mkrtychian[1], Evgeny Blagovechtchenski[1], Svetlana Kostromina[1], Yury Shtyrov[1,2,3]

[1] Saint Petersburg State University

[2] Aarhus University

[3] National Research University Higher School of Economics

4. Eye movements during reading in Russian-speaking children with dyslexia

Sofya Goldina[1], Anastasiya Lopukhina[1], Anna Laurinavichyute[1], Olga Dragoy[1]

[1] National Research University Higher School of Economics

5. Phonological and orthographic processing affect reading fluency in Russian children

Nina Zdorova[1], Anastasiya Lopukhina[1], Olga Vedenina[1], Sofya Goldina[1], Anastasiia Kaprielova[1], Vladislava Staroverova[1], Ksenia Bartseva[2], Olga Dragoy[1]

[1] National Research University Higher School of Economics

[2] Sirius University of Science and Technology

12.30–13.30

SLIDE SESSION 4

1. Different types of regressions as a text processing skills indicator: Eye-tracking study of reading in 9-11 years old dyslexics

Sergei Oganov[1], Alexandr Kornev[1]

[1] Saint Petersburg State Pediatric Medical University

2. The impact of capitalization of German nouns on semantic processing

Melanie Labusch[1,2], Manuel Perea[2,3], Sonja Kotz[1]

[1] Maastricht University

[2] University of Valencia

[3] Nebrija University

3. The effect of different types of semantic cues on word retrieval success in tip-of-the-tongue states

Elizaveta Sokolenko[1], Svetlana Malyutina[1]

[1] National Research University Higher School of Economics

4. Systematicity in language

Hana Jee[1], Monica Tamariz[1], Richard Shillcock[1]

[1] University of Edinburgh

16.00–18.00

FLASH TALKS SESSION 1

1. Maturational changes of ERP N400 and P600 components elicited by repeated written words in children, adolescents, and adults

Elizaveta Galperina[1,2], Olga Kruchinina[1,2], Ekaterina Stankova[1], Natalia Shemyakina[1,2], Zhanna Nagornova[1], Alexandr Kornev[2]

[1] Sechenov Institute of Evolutionary Physiology and Biochemistry RAS

[2] Saint Petersburg State Pediatric Medical University

2. Visual perception of iconic words depending on their de-iconization stage

Liubov Tkacheva[1], Maria Flaksman[2], Yulia Sedelkina[1], Yulia Lavitskaya[1]

[1] Saint Petersburg State University

[2] Saint Petersburg State Electrotechnical University 'LETI'

3. A normative study of Russian-language general knowledge questions

Maria Alekseeva[1], Oksana Zinchenko[1], Yury Shtyrov[1,2,3], Beatriz Martín-Luengo[1]

[1] National Research University Higher School of Economics

[2] Saint Petersburg State University

[3] Aarhus University

4. The cognitive processing of the grammatical gender of Russian nouns by Russian natives and Turkic-and-Russian bilinguals

Valeriia Palii[1], Zoya Rezanova[1]

[1] Tomsk State University

11. When seeing is not believing: The role of illustrations in judging the reliability of information

Ekaterina Blinova[1], Olga Shcherbakova[1]

[1] Saint Petersburg State University

12. The neuropsychological assessment of verbal memory in preschoolers and primary schoolchildren

Tatiana Akhutina[1], Aleksei Korneev[1], Ekaterina Matveeva[1]

[1] Lomonosov Moscow State University

13. Dynamics of mental representations of novel concrete and abstract concepts modulated by learning context and transcranial direct current stimulation

Nadezhda Novikovskaia[1], Yury Shtyrov[1,2,3], Ekaterina Blinova[1], Ekaterina Andriushchenko[1], Olga Shcherbakova[1]

[1] Saint Petersburg State University

[2] Aarhus University

[3] National Research University Higher School of Economics

14. Lexical ambiguity in slogans: Does it make a polycode text easier to recognize?

Anastasiia Konovalova[1], Tatiana Petrova[1]

[1] Saint Petersburg State University

14.15–16.30

FLASH TALKS SESSION 2

1. Development of novel word acquisition paradigm for non-invasive brain stimulation studies

Anna Zhuravleva[1], Ekaterina Stupina[1], Svetlana Malyutina[1]

[1] National Research University Higher School of Economics

2. Implicit Prosody Hypothesis in reading: Talker-to-listener distance effect in intonation contour

Iuliia Nenasheva[1]

[1] Nosov Magnitogorsk State Technical University

3. Grammatical roles assignment in Russian-speaking children

Irina Korkina[1], Anastasiya Lopukhina[1], Victoria Reshetnikova[1], Nina Ladinskaya[1]

[1] National Research University Higher School of Economics

4. Does metacognitive regulation of emotions contribute to the understanding of ambiguous texts?

Ekaterina Andriushchenko[1], Olga Shcherbakova[1]

[1] Saint Petersburg State University

5. Digital or printed? Interaction between text format and its understanding

Tatiana Isaeva[1], Olga Shcherbakova[1]

[1] Saint Petersburg State University

6. How do Spanish natives and Spanish learners resolve pronominal anaphora?

Nina Stankova[1], Mariya Khudyakova[1]

[1] National Research University Higher School of Economics

7. Speech dysfunction with damage to the subcortical structures of the brain as a result of the ischemic stroke

Kirill Gavrilchenko[1], Maria Akulenkova[1]

[1] Kursk State Medical University

8. Pitch and size in cognitive processing of verbal and non-verbal stimuli

Irina Korshunova[1], Zoya Rezanova[1]

[1] Tomsk State University

9. Oscillatory brain activity during selective word retrieval in healthy adults

Ekaterina Stankova[1], Dariya Lundina[1], Alexandra Kuznetcova[1], Elizaveta Galperina[1,2]

[1] Sechenov Institute of Evolutionary Physiology and Biochemistry RAS

[2] Saint Petersburg State Pediatric Medical University

10. Russian words for speech audiometry in children

Elena Riekhakaynen[1], Maria Boboshko[2], Yulia Lisitskaya[1]

[1] Saint-Petersburg State University

[2] Pavlov First Saint Petersburg State Medical University

11. Neurophysiological features of brain stages of visual verbal information processing in the conditions of target mental activity

Nataly Nuzhina[1], Peter Prodius[1], Irina Mukhina[1]

[1] Privolzhsky Research Medical University

12. Word length and frequency effects on eye movement parameters in elementary school children reading textbooks

Alexandra Puchkova[1], Alexandra Berlin Khenis[1]

[1] Pushkin State Russian Language Institute

13. Perception of irony in speech

Uliana Kochetkova[1], Pavel Skrelin[1], Vera Evdokimova[1], Daria Novoselova[1]

[1] Saint Petersburg State University

14. Associative semantic learning in the developing brain: Sensorimotor patterns embedded in rapid word acquisition

Marina Vasilyeva[1], Veronika Knyazeva[1], Aleksandr Aleksandrov[1], Yury Shtyrov[1,2,3]

[1] Saint Petersburg State University

[2] Aarhus University

[3] National Research University Higher School of Economics

15. Does sound determine synesthetic color? Evidence from Russian

Ivan Shkurko[1], Elena Riekhakaynen[1]

[1] Saint Petersburg State University