

16787 Colloquium/Seminar

Progress in Brain Language Research

Friedemann Pulvermüller

2 SWS, Seminar/Colloquium, SS 2021

Zeit/Time: Mi/Wed 16-18 h

Ort/Location: virtually on Webex or FU Berlin, room JK 28/130 (Habelschwerdter Allee 45)

Colloquium/Seminar *Progress in Brain Language Research*

This research seminar focuses on reviewing and discussing recent progress in the cognitive neuroscience of language and in the field of semantics/pragmatics. The seminar has four main strands:

1. BA and MA candidates working in the field of semantics, pragmatics or brain language research will present their work plans and first results,
2. Researchers at the FU Berlin's Brain Language Laboratory will present their ongoing work and explain their recent findings and publications,
3. Recently published research articles in the domain of semantics, pragmatics and brain language research will be reviewed by the participants to highlight the latest progress in the field,
4. National and international invited speakers will present their research in the fields of semantics, pragmatics and the neurobiology of language.

Several sessions of the upcoming seminar will focus on a new major research project, the just starting ERC Advanced Grant *Material Constraints Enabling Human Cognition (MatCo)*, where we are trying to specify the mechanistic neurobiological basis of human language. Ongoing research from a range of other current research endeavors will also be featured, including the project *Symbolic Materials* of the Cluster-of-Excellence *Matters of Activity*, the EU's International Training Network *Conversational Brains (CoBra)*, the French-German research initiative on *Phonological Networks in Speech Production and Understanding (PhoNet)*, and the DFG-projects on *Brain Signatures of Communication (BraiSiCo)*, *The Sound of Meaning (SOM)* and *Intensive Language Action Therapy of Aphasia (ILAT)*. Generous funding support by the European Research Council, the European Union and the Deutsche Forschungsgemeinschaft is kindly acknowledged.

Presentations will be given in English or German.

Students and researchers who are interested to participate in this colloquium are kindly requested to contact Verena.Arndt@fu-berlin.de and/or talk to Friedemann Pulvermüller in his office hour.

Topic related recent publications:

Boux, I., Tomasello, R., Grisoni, L., & Pulvermüller, F. (2021). Brain signatures predict communicative function of speech production in interaction. *Cortex*, 135, 127-145. doi: 10.1016/j.cortex.2020.11.008

Dreyer, F. R., Picht, T., Frey, D., Vajkoczy, P., & Pulvermüller, F. (2020). The functional relevance of dorsal motor systems for processing tool nouns- evidence from patients with focal lesions. *Neuropsychologia*, 1073-1084. doi: 10.1016/j.neuropsychologia.2020.107384

Grisoni, L., Tomasello, R., & Pulvermüller, F. (2021). Correlated Brain Indexes of Semantic Prediction and Prediction Error: Brain Localization and Category Specificity. *Cereb Cortex*, 31(3), 1553-1568. doi: 10.1093/cercor/bhaa308

Margiotoudi, K., & Pulvermüller, F. (2020). Action sound-shape congruencies explain sound symbolism. *Sci Rep*, 10(1), 12706. doi: 10.1038/s41598-020-69528-4

Pulvermüller, F., & Grisoni, L. (2020). Semantic Prediction in Brain and Mind. *Trends Cogn Sci*, 24(10), 781-784. doi: 10.1016/j.tics.2020.07.002

Tomasello, R., Wennekers, T., Garagnani, M., & Pulvermüller, F. (2019). Visual cortex recruitment during language processing in blind individuals is explained by Hebbian learning. *Sci Rep*, 9(1), 3579.

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Technicalities

The course is part of the teaching offered by the Freie Universität's FB Philosophy and Humanities and by the Berlin School of Mind and Brain at the Humboldt Universität. It is open to interested students from all departments. It will be chaired by Friedemann Pulvermüller under the admin support of Verena Arndt.

To obtain a certificate of attendance, it is necessary to

- attend most of the sessions (maximum misses: three),
- pre- and reprocess the session content by reading the recommended key papers, and
- present a key paper, own research or a research plan addressing language related topics.

Contact and more information:

Verena Arndt (Sekretariat), online or rm JK 31/234; phone: +49 (0)30 838 58140 E-mail:

verena.arndt@fu-berlin.de

Friedemann Pulvermüller, online or rm JK 31/232; Office hour: Wed 12-13 h

For more information and updates, please visit:

<http://www.brainlang.fu-berlin.de/teaching>

<http://www.geisteswissenschaften.fu-berlin.de/v/brainlang/teaching/index.html>

Seminar Program

Due to the corona crisis, the program Webex (<https://fu-berlin.webex.com>) will be used for online teaching and interaction. In preparation of the Seminar, please download the free version of 'Cisco Webex Meetings' and make sure that you have communicated your email address to verena.arndt@fu-berlin.de !

[For this Seminar, the following time slot and room have been reserved in case the health situation allows for real life (non-virtual) teaching and talks: Wednesdays, 16:15 – 17:45 h, in room JK 28/130 of the main building of the Freie Universität Berlin, Habelschwerdter Allee 45, 14195 Berlin. For lectures with external speakers, other locations may be booked.]

Link to the colloquium:

<https://fu-berlin.webex.com/webappng/sites/fu-berlin/meeting/download/e61d636108ac4b32a278f8e3ac1a75e9?MTID=m1edfd5ddd5d2ff1254df274ad69bbe58&siteurl=fu-berlin>

14.04. Introduction, Seminar Planning

Planning of this semester's colloquium program

Friedemann Pulvermüller on ongoing research in the BLL

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21.04. Research overview by Friedemann Pulvermüller (continued):

Ongoing research at the BLL

Paper presentation by Lars Schlenker, BLL:

Jackson, R. L., Rogers, T. T., & Lambon Ralph, M. A. (2021). Reverse-engineering the cortical architecture for controlled semantic cognition. *Nat Hum Behav.* doi: 10.1038/s41562-020-01034-z

28.04. MA project presentation by Magdalen Jonen, BLL:

Adaptation of a semantic picture-word interference paradigm to the setting of language mapping with transcranial magnetic stimulation: a behavioural study

05.05. BA project presentation by Johanna Knechtges, BLL:

Some investigations on how relatives try to solve communication problems when talking to aphasics: Presentation of some relevant factors and strategies based on the results of a questionnaire

12.05. Project presentation by Kirsten Stark, HU:

Online browser-based language production experiments with verbal and typed responses

19.05. No Colloquium – Training Event of the EU's Marie Skłodowska-Curie Innovative Training Network funding program *Conversational brains, CoBra*

26.05. No Colloquium

02.06. Research Talk by Isabella Boux, BLL:

Theory of Mind and Indirect Speech Act Processing – Results of a TMS Study

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09.06. Research talk by Laura Ciaccio, BLL:

Investigating variability in language processing with Bayesian distributional models

16.06. Research Talk by Luigi Grisoni, BLL:

Semantic predictive processing during comprehension and production

23.06. Research Talk by Malte Henningsen-Schomers, BLL:

Influence of verbal labels on concept formation and processing – a neurocomputational approach (TBC)

Fri, 25.06., 16h Guest lecture by Dr Alessandro D’Ausilio, University of Ferrara & Italian Institute of Technology, Genova:

Investigating the sensorimotor basis of human communication

30.06. Guest lecture by Professor Guillaume Thierry, University of Bangor, UK:

Language as a probe to explore the far side of the mind

07.07. Research talk by Rosario Tomasello, BLL:

EEG experiment on the brain basis of common ground (TBC)

BA project presentation by Lilly Schrewe, FUB:

Wie können wir über Emotionen sprechen? Eine Diskussion verschiedener Positionen

14.07. Project presentation by Melinda Mende, FU:

Title TBA

Research report and plans by Sepehr Mahmoudian, BLL:

Information transfer in spiking neural networks

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Planning of program for the semester break and the coming semester