

Colloquium/Seminar

Progress in Brain Language Research

Friedemann Pulvermüller

2 SWS, Seminar/Colloquium, WS 2022

Zeit/Time: Mi/Wed 16-18 h (start: 16:15h)

Ort/Location: FU Berlin, room JK 31/102 (Habelschwerdter Allee 45)

On Webex: <https://fu-berlin.webex.com/fu-berlin-en/j.php?MTID=m533a774b5cd983590cef8a980c28c112>

Colloquium/Seminar *Progress in Brain Language Research*

This seminar is for BA, MA and PhD students and for researchers interested in language science and focuses on reviewing and discussing recent progress in the cognitive neuroscience of language and in the fields of semantics and 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.

This term, there will be a focus on research related to the ERC Advanced Grant Project *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. The EU's International Training Network *Conversational Brains (CoBra)*, the French-German research initiative on *Phonological Networks in Speech Production and Understanding (PhoNet)*, will be in focus in two sessions jointly held with Kristof Strijker's group at the CNRS institute of the Université Aix-Marseille. In addition, work from the DFG-projects on *Brain Signatures of Communication (BraiSiCo)*, *The Sound of Meaning (SOM)* and *Intensive Language Action Therapy of Aphasia (ILAT)* may be covered. Generous funding support by the European Research Council, the European Union and the Deutsche Forschungsgemeinschaft is kindly acknowledged.

Presentations can 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.

Seminar related recent publications:

- Grisoni, L., & Pulvermüller, F. (2022). Predictive and perceptual phonemic processing in articulatory motor areas: A prediction potential & mismatch negativity study. *Cortex*, 155, 357-372.
- Henningsen-Schomers, M. R., Garagnani, M., & Pulvermüller, F. (2022). Influence of language on perception and concept formation in a brain-constrained deep neural network model. *Philosophical Transactions of the Royal Society B: Biological Sciences*, in press.
- Henningsen-Schomers, M. R., & Pulvermüller, F. (2022). Modelling concrete and abstract concepts using brain-constrained deep neural networks. *Psychological Research*, in press.
- Margiotoudi, K., Bohn, M., Schwob, N., Tagliatela, J., Pulvermüller, F., Epping, A., . . . Allritz, M. (2022). Bo-NO-bouba-kiki: picture-word mapping but no spontaneous sound symbolic speech-shape mapping in a language trained bonobo. *Proceedings of the Royal Society B: Biological Sciences*, 289(1968), 20211717. doi:10.1098/rspb.2021.1717
- Tomasello, R., Grisoni, L., Boux, I., Sammler, D., & Pulvermüller, F. (2022). Instantaneous Neural Processing of Communicative Functions Conveyed by Speech Prosody. *Cerebral Cortex* doi:10.1093/cercor/bhab522

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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>

Comments on the Seminar Program

This term, most of the seminars will be held at the Freie Universität 'in-presence'; however, some sessions where speakers cannot come to Berlin will be 'virtual' seminars. We will start with a session on Webex (<https://fu-berlin.webex.com>). In preparation, please install the free version of 'Cisco Webex Meetings' available from the FU website if you haven't already done so, and make sure that you have communicated your email address to verena.arndt@fu-berlin.de!

You can partake in the virtual sessions by clicking the link:

<https://fu-berlin.webex.com/fu-berlin-en/j.php?MTID=m533a774b5cd983590cef8a980c28c112>

For non-virtual 'in Präsenz' sessions of this seminar, the following time slot and room have been reserved: **Wednesdays, 16:15 – 17:45 h, in room JK 31/102 of the main building of the Freie Universität Berlin, Habelschwerdter Allee 45, 14195 Berlin.** For lectures with external speakers, other locations may be booked. It may be possible to attend in-presence sessions via webex.

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Seminar Program

sessions will be **virtual only (blue)** or in real life ('in presence')

Webex link to the colloquium and lecture room: see header above.

19.10. Introduction, Seminar Planning (via webex)

Introduction and Planning of this semester's colloquium program

26.10. Guest lecture by Dr Patrick Krauss, Universität Erlangen; Introduction by Malte Henningsen-Schomers

Language Processing in Artificial Neural Networks and the Brain

02.11. Conference highlights

Researchers from the BLL have recently attended a range of international conferences focusing on Brain Language Research and Experimental Linguistics – including NLC, CONSOLER and X-Prag. Each conference participant is invited to present the, in their view, most remarkable recent conference presentation, so as to update colloquium participants about exciting ongoing research in the field. This will result in a number of 5-10 min presentations plus discussions.

09.11. Research talk by Dr Luigi Grisoni, BLL:

Action understanding in spinal cord injury patients: Prediction Potential and MMN studies

Project presentation by Sabrina Nieswand:

Stimulus evaluation for the 4-way experiment of the PhoNet project

16.11. Research talk by Dr Malte Henningsen-Schomers, BLL:

Comparing dissimilarity measures within and between conceptual categories

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23.11. Research talk by Anna-Thekla Jäger, Bettina Mohr & Friedemann Pulvermüller

Progress from the project on Intensive Language Action Therapy

30.11. Guest lecture by Prof Julia Uddén, PhD, Department of Linguistics and Department of Psychology, Stockholm University (via Webex); Introduction by Rosario Tomasello

Language is not enough for brains in conversation

07.12. PhoNet/CoBra joint lab meeting with Dr Kristof Strijkers' group, CNRS Aix-Marseille University (via webex):

Salomé Antoine?

14.12. Guest lecture by Professor Yury Shtyrov, PhD, Center of Functionally Integrative Neuroscience, Aarhus University; introduction by Friedemann Pulvermüller

Cortical systems for rapid word acquisition: multimodal neuroimaging data

04.01. – no program –

11.01. Project presentation by Fynn Dobler

TBA

18.01. Project Presentation by Kay Shaman, BLL:

Linguistic relativity and color perception in a brain-constrained neural network

Research talk by Natasha Janzen-Ulbricht, BLL

Playing with Gestures and Memory: Evidence of L2 grammatical morpheme learning

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Fri., 20.01., 14 hct: Guest lecture by Dr Francesca Carota, Max Planck Institut Niederlande:

A brain's-eye view on semantic representations

25.01. Guest lecture by Dr Véronique Boulenger, CNRS, Lyon University; Introduction by Friedemann Pulvermüller

Exploring new paths on the embodiment of language

01.02. Project report by Laura Ciaccio, BLL:

TBA

Fri., 03.02., 14 hct: PhoNet/CoBra joint lab meeting with Dr Kristof Strijkers' group, CNRS Aix-Marseille University (via webex):

Emilia Kerr?

08.02. Research talk by Milena Osterloh and Isabella Boux, BLL:

TBA

Fri, 10.02. Guest lecture by Prof Valentina Bambini, University School for Advanced Studies (IUSS) of Pavia; Introduction by Laura Ciaccio

Towards a serial, flexible and multimodal account of metaphor processing

15.02. Course evaluation, planning of future seminar program