

Colloquium/Seminar

## **16791 Progress in Brain Language Research**

Prof Dr Dr Friedemann Pulvermüller

2 SWS, Seminar/Colloquium, Sommersemester 2025

Zeit/Time: Mi/Wed 16-18 h (start: 16.04.2025, 16:15h)

Ort/Location: FU Berlin, Habelschwerdter Allee 45, room JK 31/122 and/or on webex:

<https://fu-berlin.webex.com/fu-berlin-en/j.php?MTID=mdc430a34fff0e0782cab997cd1a0430f>

### **Colloquium/Seminar *Progress in Brain Language Research***

#### **Einführung**

Dieses Seminar und Forschungskolloquium richtet sich an BA, MA und PhD Studierende und an Forscher\*innen mit einem Interesse an Sprache und den der Sprache zugrundeliegenden Mechanismen. Thematisch stehen die Bedeutung sprachlicher Einheiten und ihr Gebrauch in der Kommunikation im Mittelpunkt, wobei ein besonderes Augenmerk den Gehirnmechanismen von Sprache und Kommunikation gilt. Der Kurs hat vier Komponenten:

1. BA und MA Kandidat\*innen stellen erste Ideen, Arbeitspläne oder Resultate ihrer wissenschaftlichen Arbeit vor und lassen diese diskutieren,
2. Forscher\*innen an der FU Berlin, insbesondere aus dem Labor für Gehirn- und Sprachforschung, stellen ihre laufenden Projekte und neue Resultate vor, die vom Plenum besprochen werden.
3. Richtungsweisende neuere Publikationen werden zusammengefasst und diskutiert,
4. Gastredner\*innen aus dem In- und Ausland halten Vorträge zu sprachwissenschaftlichen Themen, wobei auch hier die Sprachmechanismen im menschlichen Gehirn im Vordergrund stehen.

Die im Arbeitsbereich „Neurowissenschaft der Sprache, Semantik und Pragmatik“ laufenden DFG-, EU und ERC-geförderten Forschungsprojekte bilden einen wesentlichen Teil der Veranstaltung, da die neuesten Forschungsergebnisse aus diesen Projekten im Kolloquium besprochen werden.

Da unser Team internationaler Forscher\*innen die Kommunikation auf Englisch notwendig macht, bitten wir um Verständnis, dass die Veranstaltung in der Regel auf Englisch durchgeführt wird. Präsentationen und Diskussionsbeiträge auf Deutsch sind jedoch immer möglich und willkommen.

Studierende, die an einer Teilnahme interessiert sind, sollten sich bitte bei Verena.Arndt@fu-berlin.de oder Friedemann Pulvermüller anmelden.

#### **Introduction**

This seminar is for BA, MA and PhD students and for researchers interested in language science. The course will focus 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 or summarize their recent publications,
3. Recently published remarkable research articles in the fields of brain language research, semantics and pragmatics will be reviewed by the participants to highlight the progress in the field,
4. National and international expert speakers will present their research in cognitive neuroscience of language and linguistics.

There will be a focus on research related to the ongoing ERC Advanced Grant Project Material Constraints Enabling Human Cognition (MatCo), where we are trying to specify the mechanistic

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neuronal circuits underlying human language use. Ongoing research from a range of other current research endeavors will also be featured.

Most presentations will be given in English, but presentations in German are welcome too.

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

### Seminar related recent publications:

- Antoine, S., Grisoni, L., Tomasello, R., & Pulvermüller, F. (2024). The prediction potential indexes the meaning and communicative function of upcoming utterances. *Cortex*, 177, 346-362.  
<https://doi.org/10.1016/j.cortex.2024.05.011>
- Carota, F., Nili, H., Kriegeskorte, N., & Pulvermüller, F. (2024). Experientially-grounded and distributional semantic vectors uncover dissociable representations of conceptual categories. *Lang Cogn Neurosci*, 39(8), 1020-1044.  
<https://doi.org/10.1080/23273798.2023.2232481>
- Carriere, M., Tomasello, R., & Pulvermüller, F. (2024). Can human brain connectivity explain verbal working memory? *Network*, 1-42. <https://doi.org/10.1080/0954898X.2024.2421196>
- Dobler, F. R., Henningsen-Schomers, M. R. & Pulvermüller, F. (2024). Temporal dynamics of concrete and abstract concept and symbol processing: A brain constrained modelling study. *Language Learning*, 74 (S1), 258-295.  
<https://onlinelibrary.wiley.com/doi/10.1111/lang.12646>
- Grisoni, L., Boux, I. P., & Pulvermüller, F. (2024). Predictive brain activity shows congruent semantic specificity in language comprehension and production. *Journal of Neuroscience*, 44(12).  
<https://doi.org/https://doi.org/10.1523/JNEUROSCI.1723-23.2023>
- Nguyen, P. T. U., Henningsen-Schomers, M. R., & Pulvermüller, F. (2024). Causal Influence of Linguistic Learning on Perceptual and Conceptual Processing: A Brain-Constrained Deep Neural Network Study of Proper Names and Category Terms. *Journal of Neuroscience*, 44(9). <https://www.jneurosci.org/content/44/9/e1048232023>
- Tomasello, R., Carriere, M., & Pulvermüller, F. (2024). The impact of early and late blindness on language and verbal working memory: A brain-constrained neural model. *Neuropsychologia*, 196.  
[https://doi.org/ARTN\\_10881610.1016/j.neuropsychologia.2024.108816](https://doi.org/ARTN_10881610.1016/j.neuropsychologia.2024.108816)

### 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](mailto:verena.arndt@fu-berlin.de)

Johann Berger, [j.berger@fu-berlin.de](mailto:j.berger@fu-berlin.de); Tonja Scheidler, [t.scheidler@fu-berlin.de](mailto:t.scheidler@fu-berlin.de) (Teaching Assistants)

Friedemann Pulvermüller, [f.p@fu-berlin.de](mailto:f.p@fu-berlin.de), online or rm JK 31/232; Office hour: Wed 12-13 h

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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>

### **Technical comments**

Currently, most of the seminar sessions will be held at the Freie Universität 'in-presence'; however, for varying reasons, some sessions *may be held 'virtually' - as indicated by blue text below*. We may start with a session on Webex (<https://fu-berlin.webex.com>). In preparation for virtual session participation, please install the free version of 'Cisco Webex Meetings' available from the FU website and make sure that you have communicated your email address to [verena.arndt@fu-berlin.de](mailto:verena.arndt@fu-berlin.de)! You can also download the free version of Webex for computers or the Webex app.

You can also partake in the **virtual sessions** by clicking the **link in the header above**.

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**Seminar Program**

Time & location of sessions – unless otherwise indicated:

**Wednesdays, 16:15 – 17:45 h, room JK 31/122**

of the main building of the Freie Universität Berlin, Habelschwerdter Allee 45, 14195 Berlin.

Sessions will be **virtual only (blue)** or in real life ('in presence'). Real-life sessions may be broadcasted via webex, too [but will not necessarily].

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

**16.04. Introduction, Seminar Planning (via webex)**

**Friedemann Pulvermüller: Overview of ongoing research in the Brain Language Laboratory and in the ERC project *Material Constraints Enabling Human Cognition***

**Planning of this semester's colloquium program**

**23.04. Research talk by**

**Lily Schrewe (master thesis, FUB, MA Sprachwissenschaft)**

**Communicative Changes in a patient with global aphasia across a two-week interval of Intensive Language Action Therapy. A linguistic communication analysis**

**30.04. Guest lecture by**

**Prof Dr Cristina Becchio, Universität Medical Center Hamburg-Eppendorf**

**Measuring Information in Movement Kinematics**

**07.05. Research talk by**

**Ioanna Kolokytha (Master thesis, Berlin School of Mind and Brain)**

**Lesion symptom mapping of communicative activities in tumor patients**

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**14.05., Joint Colloquium and MatCo meeting:**

**Research talk by Rosario Tomasello and Maxime Carrière**

**Towards a neural mechanistic account of action sequence structure in pre-linguistic communicative functions: A brain-constrained neural network**

**Friday, 16.05., 16hct, Seminar room JK 31/122: Guest lecture by**

**Prof Dr Claus Hilgetag, Universität Hamburg**

**Connectivity principles underlying the hominization of the brain**

**21.05. Guest lecture via Zoom-X by**

**Prof Dr Andreas Engel, Director, Dept. of Neurophysiology and Pathophysiology, Universität Medical Center Hamburg-Eppendorf**

**Multi-timescale coupling and embodied cognition**

**28.05. Research talk by Fynn Dobler**

**What is so hard about abstract words anyways?**

**04.06. Research report by**

**Dr Laura Ciaccio, University of Pavia, Milena Osterloh & Luigi Grisoni, BLL:**

**Title: Results of BraVoc EEG experiment**

**11.06. Research report by**

**Dr Effy Ntemou, Universitätsmedizin Düsseldorf, & Anna-Thekla Jäger, BLL:**

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**Title: Results of MatCo fMRI experiment**

**18.06. No colloquium**

**25.06. No colloquium, postponed to...**

**Friday, 27.06., 16:15h, Seminar room JK 31/122: Guest lecture by**

**Prof Marcelo Berthier, MD, University of Málaga**

**Title: Targeting multimodal deficits with cholinergic modulation and intensive language-action therapy in post-stroke aphasia**

**Tuesday, 01.07., 16:15h, Lecture room L116, Seminarzentrum (Otto-von-Simson-Straße 26): Guest lecture as part of the Dahlem Lectures in Linguistics by**

**Prof Guadalupe Davida, PhD, University of Málaga**

**Title: Tele-rehabilitation with Intensive Language Therapy in Chronic Post-Stroke Aphasia: A Comparison with Face-to-Face Intervention**

**02.07. Project presentation by**

**09.07. Project presentation by**

**16.07. Research talk by**