

16781 Colloquium/Seminar

## **Progress in Brain Language Research**

Friedemann Pulvermüller

2 SWS, Seminar/Colloquium, WS 2020/21

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 guest scientists and specialists in brain language research will report on their latest results.

Hot seminar topics will be experimental findings from new research projects including the research focus on the *Material Basis of Symbols* of the excellence cluster *Matters of Activity*, the EU's International Training Network *Conversational Brains (CoBra)* and the French-German research initiative on *Phonological Networks in Speech Production and Understanding (PhoNet)* along with more established ones addressing experimental pragmatics (*Brain Signatures of Communication*), neurosemantics (*The Sound of Meaning*), and speech language rehabilitation (*Intensive Language Action Therapy*). Funding support by the Deutsche Forschungsgemeinschaft and the European Union is kindly acknowledged.

Presentations will be given in English or German. To participate in this colloquium, please register with [Verena.Arndt@fu-berlin.de](mailto:Verena.Arndt@fu-berlin.de) and/or talk to Friedemann Pulvermüller in his office hour.

Topic related recent publications:

- Dreyer, F. R., Doppelbauer, L., Buscher, V., Arndt, V., Stahl, B., Lucchese, G., Hauk, O., Mohr, B., & Pulvermüller, F. (2020). Increased Recruitment of Domain-General Neural Networks in Language Processing Following Intensive Language-Action Therapy: fMRI Evidence From People With Chronic Aphasia. *Am J Speech Lang Pathol*, 1-11. doi: 10.1044/2020\_AJSLP-19-00150
- 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. (2020). Correlated brain indexes of semantic predictions and prediction errors: brain localization and category specificity. *Cerebral Cortex*, in press.
- 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., Kim, C., Dreyer, F. R., Grisoni, L., & Pulvermüller, F. (2019). Neurophysiological evidence for rapid processing of verbal and gestural information in understanding communicative actions. *Sci Rep*, 9(1), 16285. doi: 10.1038/s41598-019-52158-w
- 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), rm JK 31/234; phone: +49 (0)30 838 58140 E-mail: [verena.arndt@fu-berlin.de](mailto:verena.arndt@fu-berlin.de)

Friedemann Pulvermüller, 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](mailto: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>

### **04.11. Introduction, Seminar Planning**

**Friedemann Pulvermüller:**

**Topics: This semester's colloquium program,**

**Some plans for the ERC AdG "MatCo – Material Constraints on Human Cognition"**

### **11.11. Guest lecture**

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**Prof. Dr. Markus Kiefer, Universität Ulm**

**Title: The grounding of concrete and abstract concepts in the sensory motor systems**

**18.11. Guest lecture**

**Maxime Carriere, University of London**

**Title: Spontaneous Emergence of Syntactic Categories (MSc Research)**

**Friday, 20.11., 16:00h, PhD viva practice talk**

**Konstantina Margiotoudi, BLL FU Berlin**

**Title: Practise talk PhD defense: The phylogenetic origin and mechanism of sound symbolism -- the role of action-perception circuits**

**25.11. Research talk**

**Prof. Michael Ullman, PhD, Georgetown University**

**Title: Language learning relies on brain circuits that predate humans: Evidence from typical and atypical language development**

**02.12., Project presentation**

**Tom Offrede, HU Berlin and EU Project "CoBra – Conversational Brains"**

**Title: Phonetic Alignment: Physiological and Social Correlates**

**Friday, 04.12., 16:00h, Guest lecture**

**Dr. Amie Fairs, Université Aix-Marseille & CNRS Laboratoire Parole et Langage and joint ANR & DFG project "PhoNet – Phonological Networks in speech production and comprehension"**

**Title: How much of word production and perception is shared? Similarities in "when" (and "where") linguistic representations are active**

Followed by PhoNet meeting between Aix-Marseille Univ/CNRS-LPL and FU Berlin-BLL

**11.12. Guest lecture**

**Dr. Rachel Moseley, Bournemouth University**

**Title: Lessons from the autism spectrum: language and sensorimotor grounding**

**16.12. Research talk**

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**Prof. Arnaud Rey, PhD, Université Aix-Marseille and CNRS Marseille**

**Title: Recursion and the processing of long-range dependencies**

**06.01. Project presentation**

**Salomé Antoine, BLL FU Berlin and EU Project “CoBra - Conversational Brains”**

**Title: Predictions in the understanding of communicative acts**

**13.01. Research talk**

**Dr. Luigi Grisoni, BLL FU Berlin, DFG grant SOM “The sound of meaning”**

**Title: Semantic prediction in mind and brain**

**20.01. Research talk**

**Marika Constant & Rosario Tomasello, HU Graduate School “Extrospection” and BLL FU Berlin**

**Title: Simulating fast mapping in a biologically constrained network model – the final results**

**27.01. Project presentation**

**Melinda Mende, FU Berlin**

**Title: *Grounding Negation – Investigations on Negative Numbers and Linguistic Negation***

**Project / paper presentation**

**Isabella Boux, BLL, FU Berlin**

**Title: TBA**

**03.02. Research talk**

**Caterina Villani, University of Bologna**

**Title: Varieties of abstract concepts: a multiple grounded perspective**

**10.02. Research talk**

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**17.02. BA thesis presentation:**

**Lilly Schrewe, FUB:**

**Title: Wie können wir über Emotionen sprechen? Eine Diskussion verschiedener Positionen**

**Paper presentation:**

**Isabella Boux, FUB:**

**The logic of indirect speech (Pinker, 2008, PNAS)**

Pinker, S., Nowak, M. A., & Lee, J. J. (2008). The logic of indirect speech. *Proceedings of the National Academy of Sciences*, 105(3), 833–838. <https://doi.org/10.1073/pnas.0707192105>

**Planning of program for the semester break and the coming semester**