

16886 Colloquium / Seminar

Progress in Brain Language Research

Friedemann Pulvermüller

2 SWS, Seminar/Colloquium

Zeit: Wed/Mi, 16-18 h; first session: 19.04.2017

Ort: JK 31/102 (Habelschwerdter Allee 45)

Seminar/Colloquium: Progress in Brain Language Research

This research seminar focuses on reviewing and discussing recent progress in the cognitive neuroscience of language. It has four main strands. 1) External speakers will set the stage for focused discussion of cutting edge research in the field. 2) In depth reviews of research publications will provide insights into recent progress in brain language research. 3) Researchers at the FU Berlin's Brain Language Laboratory will present their own research plans and aspects of their ongoing research to open discussion of future research perspectives. 4) BA and MA students from the Arbeitsbereich 'Neuroscience of Language and Pragmatics' will introduce their project plans and results to receive comments, assistance and guidance.

Hot topics that will form the seminar's foci in the new semester include the neural manifestations of linguistic-semantic and -pragmatic prediction (see Grisoni et al.), mapping words semantics onto the brain (see Carota et al.), the simulation of brain language mechanisms using mathematical models (see Schomers et al.) and language therapy after stroke (Stahl et al., Lucchese et al.).

Recommended reading:

Carota, F., Nili, H., Kriegeskorte, N., & Pulvermüller, F. (2017). Representational similarity mapping of distributional semantics in left inferior frontal, middle temporal and motor cortex. *Cereb Cortex*, in press.

Grisoni, L., McCormick-Miller, T., & Pulvermüller, F. (2017). Neural correlates of semantic prediction and resolution in sentence processing. *Journal of Neuroscience*, in press.

Lucchese, G., Pulvermüller, F., Stahl, B., Dreyer, F. R., & Mohr, B. (2016). Therapy-Induced neuroplasticity of language in chronic post stroke aphasia: A Mismatch Negativity study of (a)grammatical and meaningful/less mini-constructions. *Front Hum Neurosci*, 10, 669.

Schomers, M., Garagnani, M., & Pulvermüller, F. (2017). Neurocomputational consequences of evolutionary connectivity changes in perisylvian language cortex. *J Neurosci*, 3(11), 3045–3055.

Stahl, B., Mohr, B., Dreyer, F. R., Lucchese, G., & Pulvermüller, F. (2016). Using language for social interaction: Communication mechanisms promote recovery from chronic non-fluent aphasia. *Cortex*, 85, 90-99.

Tomasello, R., Garagnani, M., Wennekers, T., & Pulvermüller, F. (2017). Brain connections of words, perceptions and actions: A neurobiological model of spatio-temporal semantic activation in the human cortex. *Neuropsychologia*, in press.

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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 and co-organised by Tally McCormick-Miller 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 the language mechanisms of the human brain. Presentations can be brief or last up to 30'.

Contact and more information:

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Tally McCormick Miller, rm JK 28/025, phone: +49 (0)30 838 908585

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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.brainlang.fu-berlin.de/talks>

Seminar Program

Unless otherwise noted, the Seminar will be held on Wednesdays, from 16:15 – 17:45 h in room JK 31/122 of the main building of the Freie Universität Berlin, Habelschwerdter Allee 45, 14195 Berlin.

21.2. Research proposal:

Nicola Crook, University of Sheffield: ILAT in the NIH environment – a research plan

22.2. Guest lecture:

Dr Kristof Strijkers, CNRS and Université Aix-Marseille: Word as neural assemblies

19.04. Seminar overview and planning of the summer term

26.04. Guest lecture:

Dr Olaf Hauk, MRC Cognition & Brain Sciences Unite, Cambridge:

Human cognitive neuroscience of language: how she is taught (and how she should be)

03.05. Research talk:

Dr Luigi Grisoni, BLL, FUB: Functional relationships between the predictive and evaluative brain responses (or between RP and MMN)

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10.05. no seminar (Düsseldorf talk)

17.05. Guest lecture:

Prof Dr John Nyakatura, Exzellenzcluster ‚Bild – Wissen – Gestaltung‘, Humboldt Universität zu Berlin
Motor Resonance in Picture Perception

24.05. no seminar (European Stroke Conference, Berlin)

31.05. Research report

Isabella Boux & Rosario Tomasello, BLL, FUB: First results from a speech act production experiment

07.06. Research talk

???

14.06. Research talk at Charité CBF, 18 hct

Prof Dr Brigitte Rockstroh, Universität Konstanz: Title TBA

21.06. no seminar (Dresden workshop on brain dynamics)

Tuesday, 27.06., 17:30h at the Berlin School of Mind & Brain: Guest lecture

Dr Gesa Hartwiggsen, MPI f Human Cognitive Neuroscience, Leipzig: TBA

28.06. Research talk:

Dr Malte Schomers, CFIN (Center of Functionally Integrative Neuroscience), Aarhus University, Denmark: News from Aarhus / TMS results / abstract simulations?

05.07. no seminar (Groningen conference on speech motor control)

12.07. Guest lecture:

Olga Iljina, Universität Freiburg: TBA

19.07. Seminar evaluation and outlook

Planning of program for the semester break and winter term

5.9. European Society for Cognitive Psychology Conference Potsdam, Grounded Semantics Symposium

7.9. Berlin School of Mind & Brain: Panel Discussion on Grounded Semantics

Suggestions for discussion papers:

Chen, L., Ralph, M. A. L., & Rogers, T. T. A unified model of human semantic knowledge and its disorders. *Nature Human Behaviour*, 1, 0039.

Ralph, M. A., Jefferies, E., Patterson, K., & Rogers, T. T. (2017). The neural and computational bases of semantic cognition. *Nat Rev Neurosci*, 18(1), 42-55.

Binder, J. R., Conant, L. L., Humphries, C. J., Fernandino, L., Simons, S. B., Aguilar, M., & Desai, R. H. (2016). Toward a brain-based componential semantic representation. *Cogn Neuropsychol*, 33(3-4), 130-174. doi:10.1080/02643294.2016.1147426

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Walker, G. M., & Hickok, G. (2016). Bridging computational approaches to speech production: The semantic-lexical-auditory-motor model (SLAM). *Psychon Bull Rev*, 23(2), 339-352.