

Curriculum Vitae of **FRIEDEMANN PULVERMÜLLER**



EDUCATION

<i>Dr. rer.soc. (Ph.D.)</i>	Psychology	Universität Konstanz	1999
<i>Habilitation</i>	Psychology	Universität Konstanz	1998
<i>Habilitation</i>	Behavioral Neuroscience	Universität Tübingen	1995
<i>Dr. phil. (Ph.D.)</i>	Linguistics	Universität Tübingen	1989
<i>Staatsexamen (M.A.)</i>	Biology, German Linguistics	Universität Tübingen	1985

SCIENTIFIC APPOINTMENTS AND TEACHING

<i>Professor (W3) in Neuroscience of Language and Pragmatics</i>	Dept of Philosophy, Freie Universität Berlin	2011—
<i>Head of MEG</i>	MRC Cognition & Brain Sciences Unit, Cambridge	2007-2011
<i>Programme Leader in the Cognitive Neuroscience of Language</i>	MRC Cognition & Brain Sciences Unit, Cambridge	2000-2011
<i>Heisenberg Fellow</i>	Department of Psychology	Universität Konstanz 1996-2000
<i>Helmholtz Fellow</i>	Medical School	Universität Tübingen 1993-1996
<i>Post-doctoral fellow</i>	Dept. of Applied Linguistics	UCLA 1991-1993
<i>Research Associate</i>	Max-Planck-Institute of Biological Cybernetics	1990-1991
<i>Doctoral Fellow</i>	Linguistics	Universität Tübingen 1986-1990
<i>Lecturer</i>	Linguistics	Universität Tübingen 1986

OTHER PROFESSIONAL ACTIVITIES

<i>Visiting Scientist</i>	MRC Cognition & Brain Sciences Unit, Cambridge	2011-2013
<i>Visiting Scientist</i>	Neurosci. Inst., University of California, Berkeley	2006
<i>Visiting Scientist</i>	Centre for Medicine and Health, Univ. of Malaga	2005—
<i>Visiting Scientist</i>	BioMag Lab, Helsinki University Central Hospital	1999-2005
<i>Visiting Scientist</i>	Cognitive Brain Res. Unit Univ. of Helsinki	1998—
<i>Visiting Scientist</i>	Cognitive Science Lab Univ. of Trento	1998-1999
<i>Visiting Scientist</i>	Dept. of Applied Linguistics UCLA	1995, 1998
<i>Visiting Scientist</i>	Res. group Biomagnetism Universität Münster	1993
<i>Visiting Scientist</i>	Max Planck-Institut for Psycholinguistics	1993

HONORS, HONORARY DEGREES, AWARDS, AND FELLOWSHIPS

<i>Faculty Member</i>	Einstein Center for Neurosciences Berlin	2016—
<i>Honorary Professor</i>	Dept of Psychology, University of Malaga	2015—
<i>Honorary Doctor</i>	Inst of Behavioral Sciences, University of Helsinki	2014—
<i>Faculty Member</i>	Graduate School of Mind and Brain, Humboldt Universität zu Berlin	2013—
<i>Honorary Professor</i>	School of Computing, University of Plymouth	2012—
<i>Visiting Professor</i>	University of Helsinki	2011
<i>Visiting Professor</i>	Anglia Ruskin University Cambridge	2007-2011
<i>Visiting Professor</i>	Faculty of Biology, St. Petersburg State University	2007-2010
<i>Honorary Professor</i>	School of Psychology, University of Wales, Bangor	2004—
<i>Honorary Lecturer</i>	Dept of Appl Linguistics, Cambridge University	2003-2011
<i>Fellow</i>	Wolfson College, Cambridge University	2003-2011
<i>Member</i>	Rodin Remediation Academy, Stockholm	1999—
<i>Heisenberg fellowship</i>	Deutsche Forschungsgemeinschaft	1996
<i>Distinguished Scientific Award for Early Career Contributions to Psychophysiology, Society for Psychophysiological Research</i>		1995
<i>Attempto-Award for Brain Research, Universität Tübingen</i>		1994
<i>Helmholtz Fellowship</i>	Bundesministerium für Forschung	1993
<i>Visiting Professor</i>	Dept. of Applied Linguistics, UCLA	1992-1993
<i>Postdoctoral fellowship</i>	Deutsche Forschungsgemeinschaft	1991
<i>Research fellowship</i>	Stiftung zur Förderung der Philosophie	1988
<i>Doctoral fellowship</i>	State of Baden-Württemberg	1986

MAJOR RESEARCH GRANTS

1. Principal Investigator: F. Pulvermüller
Topic: *Neurobiology of Word Processing* 1993-1995
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/2-1
Amount of funding: ca. 100,000 €
2. Principal Investigator: F. Pulvermüller
Topic: *Lexical Deficits after Stroke* 1995-1998
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/2-2)
Amount of funding: ca. 180,000 €
3. Principal Investigator: F. Pulvermüller
Topic: *Neurobiology of Word Processing II* 1996-1999
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/2-3)
Amount of funding: ca. 100,000 €
4. Principal Investigator: F. Pulvermüller
Topic: *Activity Dynamics of Cortical Representations* 1997-2001
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/10-1)
Amount of funding: ca. 70,000 €
5. Principal Investigator: F. Pulvermüller
Topic: *Psychophysiology of Word Meaning* 1998-2001
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/11-1)
Amount of funding: ca. 70,000 €
6. Principal Investigator: F. Pulvermüller
Topic: *The right hemisphere's role in word processing* 2000--2001
Granting agency: Universität Konstanz
Amount of funding: ca. 40,000 €
7. Principal Investigator: F. Pulvermüller
Topic: *Neural basis of words, meaning and syntax* 2000--2004
Granting agency: Medical Research Council, MC_US_A060_0034
Amount of funding: ca. €1.2 Mio
8. Principal Investigator: B. Rockstroh & F. Pulvermüller
Topic: *Constraint-Induced Aphasia Therapy* 2001--2002
Granting agency: Stiftung ZNS (German CNS foundation)
Amount of funding: ca. 50,000 €
9. Principal Investigator: F. Pulvermüller, Group coordinator: Stefan Wermter
Topic: *Mirrorbot: Language, action and perception in monkeys, humans and artifacts* 2002--2005
Granting agency: European Union
Amount of funding: ca. €1.7 Mio. overall, €435,000 to Cambridge part
10. Principal Investigator: F. Pulvermüller
Topic: *Neural basis of words, meaning and syntax* 2004--2009
Granting agency: Medical Research Council MC_US_A060_0034
Amount of funding: ca. €1.5 Mio

11. Application team: W. Marslen-Wilson, F. Pulvermüller, R. Henson, Y. Shtyrov
Equipment: MEG device Elekta-Neuromag Vectorview + MSR
Granting agency: Medical Research Council 2006
Amount of funding: ca. €2.16 Mio

12. Principal Investigator: F. Pulvermüller, Group coordinator: S. Wermter
Topic: NESTcom: What it means to Communicate
 Cambridge Part On Cognitive Neuroscience 2006--2008
Granting agency: European Union NEST-2005-PATH-HUM 043374
Amount of funding: ca. €249,000 overall, €82,000 to Cambridge part

13. Principal Investigator: W. Marslen-Wilson, F. Pulvermüller, R. Henson, Y. Shtyrov
Topic: MRC-Elekta MEG Clinical Research Collaboration
Granting agency: Elekta-Neuromag, Stockholm/Helsinki 2007--2010
Amount of funding: ca. €150,000

14. Principal Investigator: F. Pulvermüller, Y. Shtyrov (for MRC Cambridge)
Topic: MEG Biomarkers of Schizophrenia
Granting agency: Gaxo-Smith-Kline 2008--2011
Amount of funding: ca. €200,000

15. Principal Investigator: F. Pulvermüller
Topic: Brain dynamics of language in time and space
Granting agency: Medical Research Council U1055.04.003.00001.01 2009--2013
Amount of funding: ca. €2.35 Mio.

16. Principal Investigator: F. Pulvermüller
Topic: Startup grant
Granting agency: Freie Universität Berlin 2011--2016
Amount of funding: ca. €610,000

17. Principal Investigator: H Kappelhoff et al., PI; F Pulvermüller, group coordinator
Topic: Interaction between motor, perceptual and linguistic systems
Granting agency: Deutsche Forschungsgemeinschaft 2012--2014
Amount of funding: ca. €6.1 Mio overall, ca. €305,000 for group

18. Principal Investigator: F. Pulvermüller
Topic: Bioinspired Architecture for Brain Embodied Language: BABEL
Granting agency: EPSRC (UK), EP/J004561/1 2012--2017
Amount of funding: ca. €550,000

19. Principle Investigator: Marian Brady, Glasgow; Germany coordinator: F. Pulvermüller
Topic: COST Action Collaboration of Aphasia Trialists 2013--2017
Granting agency: European Union
Amount of funding: ca. €512,000

20. Principle Investigator: Sue Denham, Plymouth; FU Berlin partner: F. Pulvermüller
Topic: CogNovo Project, FP7-PEOPLE-2013-ITN 2013--2016
Granting agency: European Union
Amount of funding: ca. €4.07 Mio

21. Principle Investigator: F. Pulvermüller
Topic: Constructions and Combinations 2014--2017
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/16-1
Amount of funding: ca. €300,000
22. Principle Investigator: F. Pulvermüller
Topic: Intensive Language Action Therapy 2014--2018
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/15-1
Amount of funding: ca. €430,000
23. Principle Investigator: F. Pulvermüller
Topic: The sound of meaning 2017--2020
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/22-1
Amount of funding: ca. €500,000
24. Principle Investigator: F. Pulvermüller
Topic: XPrag.de: Brain Signatures of Communication 2017--2020
Granting agency: Deutsche Forschungsgemeinschaft, DFG Pu 97/23-1
Amount of funding: ca. €330,000

TEACHING AT GRADUATE AND UNDERGRADUATE LEVELS IN THE AREAS OF

Cognitive Neuroscience, Psychophysiology, Neuropsychology
Linguistics, Psycholinguistics, Neurolinguistics, Neuroscience of Language
General Psychology (attention, emotion, language, memory, perception)
Research Methods in Cognitive Science, Neuroimaging, especially MEG, EEG

ADMINISTRATIVE ACTIVITIES

Member of administrative committees at MRC CBSU, including
Unit Management Committee
Imaging Management Committee
Graduate Student Admission and Evaluation Committee
MEG Management Committee (Chair)
At Freie Universität Berlin:
Head, Brain Language Laboratory
Deputy member, Institute Management Committee, Inst Dt Ndl Philology
At Berlin School of Mind and Brain:
Member, Committee for Early Career Support
Member, Curriculum Committee and Teaching Board

PROFESSIONAL ORGANIZATION MEMBERSHIPS

Cognitive Neuroscience Society (CNS), USA
Experimental Psychology Society (EPS), UK
Society for Psychophysiological Research (SPR), USA
Society for Neuroscience (SfN), USA

World Federation of Neurology (WFN) – Research Group on Aphasia and Cognitive Disorders (RGACD)
Society for the Neurobiology of Language (NBL), USA

EDITORIAL ACTIVITIES

Guest Editor, <i>Cortex</i>	2009-2012
Guest Editor, <i>Brain and Language</i>	2008-2011
Guest Editor, <i>Neural Networks</i>	2007-2009
Editorial Board, <i>Biolinguistics</i>	2010—
Review Editor, <i>Frontiers in Human Neuroscience</i>	2007—
Editorial Board, <i>Brain and Language</i>	2007—
Editorial Board, <i>Brain Topography</i>	2007—
Editorial Board, <i>Aphasiology</i>	1999—

REFEREE FOR SCIENTIFIC ORGANIZATIONS

Biotechnology and Biological Sciences Research Council (BBSRC), UK
Deutsche Forschungsgemeinschaft (DFG), Germany
Dutch Science Foundation, The Netherlands
Engineering and Physical Sciences Research Council (EPSRC), UK
Finnish Academy of Science, Finland
Medical Research Council (MRC), UK
National Science Foundation (NSF), USA
Stiftung ZNS, Germany
Stroke Association, UK
Wellcome Trust, UK
and many others

REFEREE FOR SCIENTIFIC JOURNALS (EXAMPLES)

Aphasiology
Behavioral and Brain Sciences
Biological Psychology
Brain and Language
Brain Research/Cognitive Brain Research
Clinical Neurophysiology/ Electroencephalography and Clinical Neurophysiology
Cognitive Neuropsychology
Cognitive Psychology
Cognitive Science
Connection Science
Current Biology
European Journal of Neuroscience
Experimental Brain Research
International Journal of Psychophysiology
Issues in Applied Linguistics

Journal of Cognitive Neuroscience
Journal of Neuroscience
Journal of Psychophysiology
Language and Cognitive Processes
Nature, Nature Neuroscience, Nature Reviews Neuroscience
Neural Networks
Neurocase
Neuroimage
Neuron
Neuropsychologia
Proceedings of the National Academy of Sciences, USA
Psychophysiology
Trends in Cognitive Sciences
Science
and many others

BIBLIOGRAPHICAL INFORMATION

Number of publications: >280, incl. >220 peer reviewed, 9 books and edited volumes
Hirsch (h) index: 75; Number of citations: > 23,000 (google scholar, 1.9.2017)

List of Publications

[A] BOOKS, DISSERTATIONS, EDITED VOLUMES

1. Pulvermüller, F. 1990. *Aphasische Kommunikation. Grundfragen ihrer Analyse und Therapie. Sprachtherapie 2*. [Aphasic Communication. Key questions of its analysis and therapy]. Gunter Narr Verlag: Tübingen.
2. Pulvermüller, F. 1996. *Neurobiologie der Sprache* [Neurobiology Of Language]. *Gehirntheoretische Überlegungen und empirische Befunde zur Sprachverarbeitung. Psychologia Universalis 1*. Pabst Science Publishers: Lengerich, Berlin.
3. Pulvermüller, F. 2001. *Neuronal grammar. An essay on brain mechanisms of serial order*. Doctoral dissertation, University of Konstanz.
4. Pulvermüller, F. 2003. *The Neuroscience Of Language: On Brain Circuits Of Words and Serial Order*. Cambridge University Press, Cambridge, UK.
5. Shtyrov, Y. & Pulvermüller, F. (eds.) 2006. *Fourth Conference On Mismatch Negativity (MMN) And Its Clinical And Scientific Applications*, April 22-26, 2006. MRC Cognition and Brain Sciences Unit, Cambridge, UK.
6. Wermter, S., Page, M., Knowles, M., Gallese, V., Pulvermüller, F., & Taylor, J. (eds.) 2009. *Multimodal communication in animals, humans and robots*. Special issue of the journal *Neural Networks*, **22** (2).
7. Knoeferle, P., Crocker, M. W., & Pulvermüller, F. (eds.) 2010. *Embodied sentence processing*. Special issue of the journal *Brain and Language*, **112** (3).
8. Cappa, S., & Pulvermüller, F. (eds.) 2012. *Language and the Motor System*. Special Issue of the Journal *Cortex*, **48** (7).
9. Berthier, M. L., Green, C., Juárez, R., Lara, J. P., & Pulvermüller, F. 2014. *REGIA: Rehabilitación grupal intensiva de la afasia*. Madrid: TEA Ediciones, S.A.

[B] ARTICLES IN REFEREED INTERNATIONAL JOURNALS

1991

10. Pulvermüller, F. & Preißl, H. 1991: A cell assembly model of language. *Network: Computation in Neural Systems* **2**, 455-468.
11. Pulvermüller, F. & Roth, V.M. 1991: Communicative aphasia treatment as a further development of PACE-therapy. *Aphasiology* **5**, 39-50.

1992

12. Pulvermüller, F. 1992: Constituents of a neurological theory of language. *Concepts in Neuroscience* **3**, 157-200.
13. Braitenberg, V. & Pulvermüller, F. 1992: Entwurf einer neurologischen Theorie der Sprache. *Naturwissenschaften* **79**, 103-117.

1993

14. Pulvermüller, F. & Schönle, P.-W. 1993: Behavioral and neuronal changes during treatment of mixed transcortical aphasia. *Cognition* **48**, 139-161.

1994

15. Pulvermüller, F. 1994: Why cell assembly ignition should lead to gamma band responses. *Psychology* **5 (65)**, 1-6.
16. Pulvermüller, F. & Lutzenberger, W. 1994: Specific gamma-band depression and linguistic units. *Psychology* **5 (68)**, 1-8.
17. Pulvermüller, F. & Preißl, H. 1994: Explaining aphasias in neuronal terms. *Journal of Neurolinguistics* **8**, 75-81
18. Pulvermüller, F. Preißl, H., Eulitz, C., Pantev, C., Lutzenberger, W., Elbert, T. & Birbaumer, N. 1994: Brain rhythms, cell assemblies and cognition: evidence from the processing of words and pseudowords. *Psychology* **5 (48)**, 1-30.
19. Pulvermüller, F., Preißl, H., Lutzenberger, W. & Birbaumer, N. 1994: Simple models first. *Psychology* **5 (66)**, 1-4.
20. Pulvermüller, F. & Schumann, J.H. 1994: Neurobiological mechanisms of language acquisition. *Language Learning* **44**, 681-734.
21. Lutzenberger, W., Pulvermüller, F. & Birbaumer, N. 1994: Words and pseudowords elicit distinct patterns of 30-Hz EEG responses in humans. *Neuroscience Letters* **176**, 115-118.
22. Lutzenberger, W., Pulvermüller, F., Elbert, T. & Birbaumer, N. 1994: Increased gamma-band power: new data against old prejudices. *Psychology* **5 (67)**, 1-9.
23. Mohr, B., Pulvermüller, F., Rayman, J. & Zaidel, E. 1994: Interhemispheric cooperation during lexical processing is mediated by the corpus callosum: evidence from the split-brain. *Neuroscience Letters* **181**, 17-21.
24. Mohr, B., Pulvermüller, F. & Zaidel, E. 1994: Lexical decision after left, right, and bilateral presentation of content words, function words, and non-words: evidence for interhemispheric interaction. *Neuropsychologia* **32**, 105-124.

1995

25. Pulvermüller, F. 1995: Agrammatism: behavioral description and neurobiological explanation. *Journal of Cognitive Neuroscience* **7**, 165-181.
26. Pulvermüller, F. 1995: What neurobiology can buy language theory. *Studies in Second Language Acquisition* **17**, 73-77.
27. Pulvermüller, F. 1995: Neurobiologie der Wortverarbeitung. *Naturwissenschaften* **82**, 279-287.
28. Pulvermüller, F., Lutzenberger, W. & Birbaumer, N. 1995: Electrocortical distinction of vocabulary types. *Electroencephalography and Clinical Neurophysiology* **94**, 357-370.
29. Pulvermüller, F., Lutzenberger, W. Preißl, H. & Birbaumer, N. 1995: Motor programming in both hemispheres: an EEG study of the human brain. *Neuroscience Letters* **189**, 5-8.
30. Pulvermüller, F., Lutzenberger, W. Preißl, H. & Birbaumer, N. 1995: Spectral responses in the gamma-band: physiological signs of higher cognitive processes? *NeuroReport* **6**, 2059-2064.
31. Pulvermüller, F. & Preißl, H. 1995: Local or transcortical assemblies? Evidence from cognitive neuroscience (Response to D. Amit). *Behavioral and Brain Sciences* **18**, 640-641.
32. Pulvermüller, F. & Schumann, J.H. 1995: On the interpretation of earlier recovery of the second language after injection of sodium Amytal in the left middle cerebral artery. *Language Learning* **45**, 729-73
33. Lutzenberger, W., Preißl, H. & Pulvermüller, F. 1995: Fractal dimension of EEG time series and underlying brain processes. *Biological Cybernetics* **73**, 477-482.
34. Lutzenberger, W., Pulvermüller, F., Elbert, T. & Birbaumer, N. 1995: Visual stimulation alters local 40-Hz responses in humans: an EEG study. *Neuroscience Letters* **183**, 39-42.
35. Preißl, H., Pulvermüller, F., Lutzenberger, W. & Birbaumer, N. 1995: Evoked potentials distinguish between nouns and verbs. *Neuroscience Letters* **197**, 81-83.

1996

36. Pulvermüller, F. 1996: Hebb's concept of cell assemblies and the psychophysiology of word processing. *Psychophysiology* **33**, 317-333.
37. Pulvermüller, F., Eulitz, C., Pantev, C., Mohr, B., Feige, B., Lutzenberger, W., Elbert, T. & Birbaumer, N. 1996: High-frequency cortical responses reflect

lexical processing: an MEG study. *Electroencephalography and Clinical Neurophysiology* **98**, 76-85.

38. Pulvermüller, F., Lutzenberger, W., Müller, V., Mohr, B., Dichgans, J. & Birbaumer, N. 1996: P3 and contingent negative variation in Parkinson's disease. *Electroencephalography and Clinical Neurophysiology* **98**, 456-467.
39. Pulvermüller, F. & Mohr, B. 1996: Transcortical cell assemblies: A key to the understanding of cortical lateralization and interhemispheric interaction. *Neuroscience and Biobehavioral Reviews* **30**, 557-566.
40. Pulvermüller, F., Mohr, B. & Preißl, H. 1996: Biology of language: principles, predictions, and evidence. *Behavioral and Brain Sciences* **19**, 643-644.
41. Pulvermüller, F., Mohr, B., Sedat, N., Hadler, B. & Rayman, J. 1996: Word class specific deficits in Wernicke's aphasia. *Neurocase* **2**, 203-212.
42. Pulvermüller, F., Preißl, H., Lutzenberger, W. & Birbaumer, N. 1996: Brain rhythms of language: nouns versus verbs. *European Journal of Neuroscience* **8**, 937-941.
43. Mohr, B., Pulvermüller, F., Mittelstädt, K. & Rayman, J. 1996: Multiple simultaneous stimulus presentation facilitates lexical processing. *Neuropsychologia* **34**, 1003-1013.
44. Mohr, B., Müller, V., Mattes, R., Rosin, R., Federmann, B., Strehl, U., Pulvermüller, F., Müller, F. & Birbaumer, N. 1996: Behavioral treatment of Parkinson's disease leads to improvement of motor skills and to tremor reduction. *Behavior Therapy* **27**, 235-255.
45. Montoya, P., Larbig, W., Pulvermüller, F., Flor, H. & Birbaumer, N. 1996: Cortical correlates of semantic classical conditioning. *Psychophysiology* **33**, 644-649.
46. Preißl, H., Lutzenberger, W. & Pulvermüller, F. 1996: Is there chaos in the brain? *Behavioral and Brain Sciences* **19**, 307-308.

1997

47. Pulvermüller, F. 1997: Aspects of language mechanisms: a Hebbian perspective. *European Review* **5**, 23-37.
48. Pulvermüller, F. 1997: Brain-theoretical perspectives on language. *Theoretical Linguistics* **23**, 281-302.
49. Pulvermüller, F., Birbaumer, N., Lutzenberger, W. & Mohr, B. 1997: High-frequency cortical activity: its possible role in attention, gestalt processing and language. *Progress in Neurobiology* **52**, 427-445.

50. Lutzenberger, W., Preißl, H., Birbaumer, N. & Pulvermüller, F. 1997: High-frequency cortical responses: do they not exist if they are small? *Electroencephalography and Clinical Neurophysiology* **102**, 64-66.
51. Müller, V., Mohr, B., Rosin, R., Pulvermüller, F., Müller, F. & Birbaumer, N. 1997: Short-term effects of behavioural treatment on movement initiation and postural control in Parkinson's disease: a controlled clinical study. *Movement Disorders* **12**, 306-314.
52. Preißl, H., Lutzenberger, W., Pulvermüller, F. & Birbaumer, N. 1997: Fractal dimensions of short EEG time series in humans. *Neuroscience Letters* **225**, 77-80.

1998

53. Pulvermüller, F. 1998: On the matter of rules. Past tense-formation and its relevance for cognitive neuroscience. *Network: Computation in Neural Systems* **9 R**, 1-52.
54. Mohr, B., Pulvermüller, F. & Schleichert, H. 1998: Learned changes of brain states alter cognitive processing in humans. *Neuroscience Letters* **253**, 159-162.
55. Dobel, C., Hauk, O., Zobel, E., Eulitz, C., Pulvermüller, F., Cohen, R., Schönle, P.W., Elbert, T. & Rockstroh, B. 1998: Monitoring brain activity of human subjects during delayed matching to sample tasks comparing verbal and pictorial stimuli with modal and cross-modal presentation: an event related potential study employing a source reconstruction method. *Neuroscience Letters* **253**, 179-182.

1999

56. Pulvermüller, F. 1999: Words in the brain's language (Target Article). *Behavioral and Brain Sciences* **22**, 253-279.
57. Pulvermüller, F. 1999: Toward a Cognitive Neuroscience of Language (Response to Commentaries). *Behavioral and Brain Sciences* **22**, 301-336.
58. Pulvermüller, F. 1999: Lexical access as a brain mechanism (Commentary on Levelt). *Behavioral and Brain Sciences* **22**, 50-52.
59. Pulvermüller, F. 1999: Mind the brain, and brain the mind! (Commentary on Clahsen). *Behavioral and Brain Sciences* **22**, 1035-1036.
60. Pulvermüller, F., Keil, A. & Elbert, T. 1999: High-frequency brain activity: perception or active memory? *Trends in Cognitive Sciences*, **3**, 250-252.
61. Pulvermüller, F., Preißl, H. & Lutzenberger, W. 1999: Nouns and verbs in the intact brain: evidence from event-related potentials and high-frequency cortical responses. *Cerebral Cortex*, **9**, 497-506.

62. Pulvermüller, F., Mohr, B. & Schleichert, H. 1999: Semantic or lexico-syntactic factors: What determines word-class-specific activity in the human brain? *Neuroscience Letters*, **275**, 81-84.

2000

63. Pulvermüller, F. 2000: Syntactic circuits: How does the brain create serial order in sentences? *Brain and Language*, **71**, 194-199.
64. Pulvermüller, F., Härle & Hummel, F. 2000: Neurophysiological distinction of semantic verb categories. *NeuroReport*, **11**, 2789-2793.
65. Pulvermüller, F., Mohr, B., Schleichert, H. & Veit, R. 2000: Operant conditioning of left-hemispheric slow cortical potentials and its effect on word processing. *Biological Psychology*, **53**, 177-215.
66. Mohr, B., Pulvermüller, F., Cohen, R. & Rockstroh, B. 2000: Interhemispheric cooperation during word processing: evidence for callosal dysfunction in schizophrenic patients. *Schizophrenia Research*, **46**, 231-239.

2001

67. Pulvermüller, F. 2001: Brain reflections of words and their meaning. *Trends in Cognitive Sciences*, **5**, 517-524.
68. Pulvermüller, F. 2001: Mutual access and mutual dependence of conceptual components. (Commentary on Humphreys and Forde.) *Behavioral and Brain Sciences*, **24**, 490-492.
69. Pulvermüller, F., Assadollahi, R. & Elbert, T. 2001: Neuromagnetic evidence for early semantic access in word recognition. *European Journal of Neuroscience*, **13**, 201-205.
70. Pulvermüller, F., Neininger, B., Elbert, T., Mohr, B., Rockstroh, B., Koebbel, P. & Taub, E. 2001: Constraint-induced therapy of chronic aphasia following stroke. *Stroke*, **32**, 1621-1626.
71. Pulvermüller, F., Härle, M. & Hummel, F. 2001: Walking or talking?: Behavioral and electrophysiological correlates of action verb processing. *Brain and Language*, **78**, 143-168.
72. Pulvermüller, F., Kujala, T., Shtyrov, Y., Simola, J., Tiitinen, H., Alku, P., Alho, K., Martinkauppi, S., Ilmoniemi, R. J. & Näätänen, R. 2001: Memory traces for words as revealed by the Mismatch Negativity (MMN). *NeuroImage*, **14**, 107-616.
73. Assadollahi, R. & Pulvermüller, F. 2001: Neuromagnetic evidence for early access to cognitive representations. *Neuroreport*, **12**, 207-213.

74. Dobel, C., Pulvermüller, F., Härle, M., Cohen, R., Koebbel, P., Schonle, P.W. & Rockstroh, B. 2001: Syntactic and semantic processing in the healthy and aphasic human brain. *Experimental Brain Research*, **140**, 77-85.
75. Mohr, B., Heim, S., Pulvermüller, F. & Rockstroh, B. 2001: Functional asymmetry in schizophrenic patients during auditory speech processing. *Schizophrenia Research*, **52**, 69-78.
76. Müller, V., Lutzenberger, W., Pulvermüller, F. & Mohr, B. 2001: Investigation of brain dynamics in Parkinson's disease by methods derived from nonlinear dynamics. *Experimental Brain Research*, **137**, 103-110.
77. Neininger, B. & Pulvermüller, F. 2001: The right hemisphere's role in action verb processing: A double case study. *Neurocase*, **7**, 103-317.

2002

78. Pulvermüller, F. 2002: A brain perspective on language mechanisms: from discrete neuronal ensembles to serial order. *Progress in Neurobiology*, **67**, 85-111.
79. Mohr, B. & Pulvermüller, F. 2002: Redundancy gains and costs in cognitive processing: the effect of short SOAs. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, **28**(6), 1200-1223.
80. Shtyrov, Y. & Pulvermüller, F. 2002: Processing of an inflectional affix by the human brain as revealed by the Mismatch Negativity (MMN). *European Journal of Neuroscience*, **15**, 1085-1091.
81. Shtyrov, Y. & Pulvermüller, F. 2002: Neurophysiological evidence for memory traces for words in the human brain. *Neuroreport*, **13**, 521-525.

2003

82. Pulvermüller, F. 2003: Sequence detectors as a basis of grammar in the brain. *Theory in Biosciences*, **122**, 87-103.
83. Pulvermüller, F. & Shtyrov, Y. 2003: Automatic processing of grammar in the human brain as revealed by the Mismatch Negativity. *Neuroimage*, **20**, 1020-1025.
84. Pulvermüller, F., Shtyrov, Y. & Ilmoniemi, R. 2003: Spatio-temporal patterns of neural language processing: an MEG study using Minimum-Norm Current Estimates. *Neuroimage*, **20**, 159-172.
85. Assadollahi, R. & Pulvermüller, F. 2003: Early influences of word length and frequency: a group study in the MEG. *Neuroreport*, **14**, 1183-1187.

86. Micheyl, C., Carlyon, R.P., Shtyrov, Y., Hauk, O., Dodson, T. & Pulvermüller, F. 2003: Neurophysiological correlates of a perceptual illusion: A Mismatch Negativity study. *Journal of Cognitive Neuroscience*, **15**, 747-758.
87. Müller, V., Lutzenberger, W., Preißl, H., Pulvermüller, F. & Birbaumer, N. 2003: Complexity of visual stimuli and non-linear EEG dynamics in humans. *Cognitive Brain Research*, **16**, 104-110.
88. Neininger, B. & Pulvermüller, F. 2003: Word category specific deficits after right-hemispheric lesions. *Neuropsychologia*, **41**, 53-70.
89. Shtyrov, Y., Pulvermüller, F., Näätänen, R. & Ilmoniemi, R. 2003: Grammar processing outside the focus of attention: an MEG study. *Journal of Cognitive Neuroscience*, **15**, 1195-1206.

2004

90. Pulvermüller, F. 2004: Lexical access as a brain mechanism. *Behavioral and Brain Sciences*, **27**, 297-298.
91. Pulvermüller, F. & Mohr, B. 2004: Determinants of ignition times: Topographies of cell assemblies and activation delays they imply. *Behavioral and Brain Sciences*, **27**, 308-311.
92. Pulvermüller, F., Mohr, B. & Lutzenberger, W. 2004: Neurophysiological signs of word and pseudoword processing in well-recovered aphasics and patients with right hemispheric stroke. *Psychophysiology*, **41**, 584-591..
93. Pulvermüller, F., Shtyrov, Y., Kujala, T. & Näätänen, R. 2004: Word-specific cortical activity as revealed by the mismatch negativity. *Psychophysiology*, **41**, 106-112.
94. Endrass, T., Mohr, B. & Pulvermüller, F. 2004: Enhanced mismatch negativity brain response after binaural word presentation. *European Journal of Neuroscience*, **19**, 1653-1660.
95. Hauk, O., Johnsrude, I. & Pulvermüller, F. 2004: Somatotopic representation of action words in human motor and premotor cortex. *Neuron*, **41**, 301-307.
96. Hauk, O. & Pulvermüller, F. 2004: Neurophysiological distinction of action words in the fronto-central cortex. *Human Brain Mapping*, **21**, 191-201.
97. Hauk, O. & Pulvermüller, F. 2004: Effects of word length and frequency on the human event-related potential. *Clinical Neurophysiology*, **115**, 1090-1103.
98. Shtyrov, Y., Hauk, O. & Pulvermüller, F. 2004: Distributed neuronal networks for encoding category-specific semantic information: the mismatch negativity to action words. *European Journal of Neuroscience*, **19**, 1083-1092.

99. Wermter, S., Weber, C., Elshaw, M., Panchev, C., Erwin, H. & Pulvermüller, F. 2004: Towards multimodal neural robot learning. *Robotics and Autonomous Systems*, **47**, 171-175.

2005

100. Pulvermüller, F. 2005: Brain mechanisms linking language and action. *Nature Reviews Neuroscience*, **6** (7), 576-582.
101. Pulvermüller, F. 2005: From babbling to articulatory echo neurons and unsolved questions of syntax. *Behavioral and Brain Sciences*, <http://www.bbsonline.org/Preprints/Arbib-05012002/Supplemental/Pulvermuller.pdf>
102. Pulvermüller, F., Shtyrov, Y. & Ilmoniemi, R. 2005: Brain signatures of meaning access in action word recognition. *Journal of Cognitive Neuroscience*, **17** (6), 884-892.
103. Pulvermüller, F., Hauk, O., Nikulin, V. & Ilmoniemi, R.J. 2005: Functional interaction of language and action: a TMS study. *European Journal of Neuroscience*, **21** (3), 793-797.
104. Pulvermüller, F., Hauk, O., Zohsel, K., Neining, B. & Mohr, B. 2005: Therapy-related reorganization of language in both hemispheres of patients with chronic aphasia. *Neuroimage*, **28** (2), 481-489.
105. Shtyrov, Y., Pihko, E. & Pulvermüller, F. 2005: Determinants of dominance: Is language laterality explained by physical or linguistic features of speech? *Neuroimage*, **27** (1), 37-47.

2006

106. Pulvermüller, F., & Hauk, O. 2006. Category-specific processing of color and form words in left fronto-temporal cortex. *Cerebral Cortex*, **16** (8), 1193-1201.
107. Pulvermüller, F., Huss, M., Kherif, F., Moscoso del Prado Martin, F., Hauk, O., & Shtyrov, Y. 2006. Motor cortex maps articulatory features of speech sounds. *Proceedings of the National Academy of Sciences, U.S.A.*, **103** (20), 7865-7870.
108. Pulvermüller, F., & Shtyrov, Y. 2006. Language outside the focus of attention: the mismatch negativity as a tool for studying higher cognitive processes. *Progress in Neurobiology*, **79** (1), 49-71.
109. Pulvermüller, F., Shtyrov, Y., Ilmoniemi, R. J. & Marslen-Wilson, W. 2006: Mapping speech comprehension in space and time. *Neuroimage*, **31** (3), 1297-1303.
110. Bak, T. H., Yancopoulos, D., Nestor, P., Xuereb, J., Spillantini, M. G., Pulvermüller, F., & Hodges, J. R. 2006: Clinical, imaging and pathological

- correlates of a hereditary deficit in verb and action processing. *Brain*, **129** (Pt 2), 321-332.
111. Berthier, M. L., Pulvermüller, F., Green, C., & Higuera, C. 2006: Are release phenomena explained by disinhibited mirror neuron circuits?: Arnold Pick's remarks on echographia and their relevance for modern cognitive neuroscience. *Aphasiology*, **20** (5), 462-480.
112. Gonzalez, J., Barros-Loscertales, A., Pulvermüller, F., Meseguer, V., Sanjuan, A., Belloch, V., & Avila, C. 2006. Reading cinnamon activates olfactory brain regions. *Neuroimage*, **32** (2), 906-912.
113. Hauk, O., Davis, M. H., Ford, M., Pulvermüller, F., & Marslen-Wilson, W. D. 2006. The time course of visual word recognition as revealed by linear regression analysis of ERP data. *Neuroimage*, **30** (4), 1383-1400.
114. Hauk, O., Patterson, K., Woollams, A., Watling, L., Pulvermüller, F., & Rogers, T. T. 2006: [Q:] When would you prefer a SOSSAGE to a SAUSAGE? [A:] At about 100 ms. ERP correlates of orthographic typicality and lexicality in written word recognition. *Journal of Cognitive Neuroscience*, **18**, 818-832.
115. Hauk, O., Shtyrov, Y., & Pulvermüller, F. 2006: The sound of actions as reflected by mismatch negativity: Rapid activation of cortical sensory-motor networks by sounds associated with finger and tongue movements. *European Journal of Neuroscience*, **23** (3), 811-821.
116. Moscoso del Prado Martin, F., Hauk, O., & Pulvermüller, F. 2006: Category-specificity in the processing of color-related and form-related words: An ERP study. *Neuroimage*, **29** (1), 29-37.
117. Wennekers, T. Garagnani, M. & Pulvermüller, F. 2006: Language models based on Hebbian cell assemblies. *Journal of Physiology, Paris*, **100**, 16-30.
- 2007**
118. Pulvermüller, F. & Assadollahi, R. 2007. Grammar or serial order?: Discrete combinatorial brain mechanisms reflected by the syntactic Mismatch Negativity. *Journal of Cognitive Neuroscience*, **19** (6), 971-80.
119. Garagnani, M., Wennekers, T. & Pulvermüller, F. 2007. A neural model of the language cortex. *Neurocomputing*, **70**, 1914-1919.
120. Hauk, O., Patterson, K., Woollams, A., Pye, E., Pulvermüller, F. & Rogers, T. T. 2007. How the camel lost its hump: The impact of object typicality on ERP signals in object decision. *Journal of Cognitive Neuroscience*, **19**, 1338-1353.
121. Mohr, B., Endrass, T., Hauk, O. & Pulvermüller, F. 2007. ERP correlates of the bilateral redundancy gain for words. *Neuropsychologia*, **45** (9), 2114-2124.

122. Penolazzi, B., Hauk, O. & Pulvermüller, F. 2007. Early lexical access and semantic context integration as revealed by event-related brain potentials. *Biological Psychology*, **74** (3), 374-388.
123. Shtyrov, Y. & Pulvermüller, F. 2007. Early activation dynamics in the left temporal and inferior-frontal cortex reflect semantic context integration. *Journal of Cognitive Neuroscience*, **19** (10), 1633-1642.
124. Shtyrov, Y. & Pulvermüller, F. 2007. Language in the mismatch negativity design: motivations, benefits and perspectives. *Journal of Psychophysiology*, **21** (3), 1-12.

2008

125. Pulvermüller, F. & Berthier, M. L., 2008. Aphasia therapy on a neuroscience basis. *Aphasiology*, **22** (6), 563-599.
126. Pulvermüller, F., Shtyrov, Y., Hasting, A. & Carlyon, R.P. 2008. Syntax as a reflex: Neurophysiological evidence for early automaticity of grammatical processing. *Brain and Language*, **104** (1), 244-253.
127. Garagnani, M., Wennekers, T., & Pulvermüller, F. 2008. A neuroanatomically-grounded Hebbian learning model of attention-language interactions in the human brain. *European Journal of Neuroscience*, **27** (2), 492-513.
128. Hauk, O., Davis, M.H., Kherif, F. & Pulvermüller, F. 2008: Imagery or Meaning? Evidence for a semantic origin of category-specific brain activity in metabolic imaging. *European Journal of Neuroscience*, **27** (7), 1856-1866.
129. Hauk, O., Davis, M.H. & Pulvermüller, F., 2008. Modulation of brain activity by multiple lexical and word form variables in visual word recognition: A parametric fMRI study. *Neuroimage*, **42** (3), 1185-1195.
130. Hauk, O., Shtyrov, Y. & Pulvermüller, F. 2008: The time course of action and action-word comprehension in the human brain as revealed by neurophysiology. *Journal of Physiology, Paris*, **102** (1-3), 50-58.
131. Mohr, B., Pulvermüller, F., Rockstroh, B. & Endrass, T. 2008. Hemispheric cooperation – A crucial factor in schizophrenia? Neurophysiological evidence. *Neuroimage*, **41** (3) 1102-1110.
132. Shtyrov, Y., Osswald, K. & Pulvermüller, F. 2008. Memory traces for spoken words in the brain as revealed by the haemodynamic correlate of the mismatch negativity (MMN). *Cerebral Cortex*, **18** (1), 29-37.

2009

133. Pulvermüller, F., Kherif, F., Hauk, O., & Nimmo-Smith, I. 2009. Cortical cell assemblies for lexical and category-specific semantic processing as revealed by fMRI cluster analysis. *Human Brain Mapping*, **30** (12), 3837-3850.

134. Pulvermüller, F., & Knoblauch, A. 2009. Discrete combinatorial circuits emerging in neural networks: a mechanism for rules of grammar in the human brain? *Neural Networks*, **22** (1), 161-172.
135. Pulvermüller, F. & Shtyrov, Y. 2009. Spatio-temporal signatures of large-scale synfire chains for speech as revealed by MEG. *Cerebral Cortex*, **19** (1), 79-88.
136. Pulvermüller, F., Shtyrov, Y., & Hauk, O. 2009. Understanding in an instant: neurophysiological evidence for mechanistic language circuits in the brain. *Brain and Language*, **110** (2), 81-94.
137. Berthier, M. L., Green, C., Lara, J. P., Higuera, C., Barbancho, M. A., Dávila, G., & Pulvermüller, F. 2009. Memantine and constraint-induced aphasia therapy in chronic post-stroke aphasia. *Annals of Neurology*, **65** (5), 577-85.
138. Boulenger, V., Hauk, O., & Pulvermüller, F. 2009. Grasping ideas with the motor system: Semantic somatotopy in idiom comprehension. *Cerebral Cortex*, **19** (8), 1905-1914.
139. Carlyon, R. P., Deeks, J., Shtyrov, Y., Grahn, J., Gockel, H., Hauk, O., & Pulvermüller, F. 2009. Changes in the perceived duration of a narrowband sound induced by a preceding stimulus: a retrospective effect in auditory perception? *Journal of Experimental Psychology: Human Perception and Performance*, **35** (6), 1898-912.
140. D'Ausilio, A., Pulvermüller, F., Salmas, P., Bufalari, I., Begliomini, C., & Fadiga, L. 2009. The motor somatotopy of speech perception. *Current Biology*, **19** (5), 381-385.
141. D'Ausilio, A., Pulvermüller, F., Salmas, P., Bufalari, I., Begliomini, C., & Fadiga, L. 2009. Speech perception may causally depend on the activity of motor centers. *Current Biology*, http://www.cell.com/current-biology/comments_Dausilio.
142. Garagnani, M., Shtyrov, Y., & Pulvermüller, F. 2009. Effects of attention on what is known and what is not: MEG evidence for functionally discrete memory circuits. *Frontiers in Human Neuroscience*, **3** (10) doi:10.3389/neuro.09.010.2009.
143. Garagnani, M., Wennekers, T., & Pulvermüller, F. 2009. Recruitment and consolidation of cell assemblies for words by way of Hebbian learning and competition in a multi-layer neural network. *Cognitive Computation*, **1** (2), 160-176.
144. Hauk, O., Davis, M.H., Ford, M., Marslen-Wilson, W. D. & Pulvermüller, F., 2009. Can I have a quick word? Early electrophysiological manifestations of psycholinguistic processes revealed by event-related regression analysis of the EEG. *Biological Psychology*, **80** (1), 64-74.

145. Vestergaard, M. D., Haden, G. P., Shtyrov, Y., Patterson, R. D., Pulvermüller, F., Denham, S. L., Sziller, I., & Winkler, I. 2009. Auditory size-deviant detection in adults and newborn infants. *Biological Psychology*, **82** (2), 169-75.
146. Wermter, S., Page, M., Knowles, M., Gallese, V., Pulvermüller, F., & Taylor, J. 2009. Multimodal communication in animals, humans and robots: An introduction to perspectives in brain-inspired informatics. *Neural Networks*, **22** (2), 111-115.
147. Winkler, I., Czigler, I., Salisbury, D. F., & Pulvermüller, F. 2009. The Fifth Conference on Mismatch Negativity (MMN) and its Clinical and Scientific Applications. *Frontiers in Neuroscience*, **3** (2), XXIV-XXV.

2010

148. Pulvermüller, F. 2010. Brain-language research: Where is the progress? *Biolinguistics*, **4** (2-3), 255-288.
149. Pulvermüller, F. 2010. Brain embodiment of syntax and grammar: Discrete combinatorial mechanisms spelt out in neuronal circuits. *Brain and Language*, **112** (3), 167-179.
150. Pulvermüller, F., & Fadiga, L. 2010. Active perception: Sensorimotor circuits as a cortical basis for language. *Nature Reviews Neuroscience*, **11** (5), 351-360.
151. Pulvermüller, F., Pye, E., Cook, C., Hauk, O., Nestor, P., & Patterson, K. 2010. The word processing deficit in Semantic Dementia: All categories are equal but some categories are more equal than others. *Journal of Cognitive Neuroscience*, **22** (9), 2027-2041.
152. Boudelaa, S., Pulvermüller, F., Hauk, O., Shtyrov, Y., & Marslen-Wilson, W. 2010. Arabic morphology in the neural language system: A mismatch negativity study. *Journal of Cognitive Neuroscience*, **22** (5), 998-1010.
153. Cappelle, B., Shtyrov, Y., & Pulvermüller, F. 2010. Heating up or cooling up the brain? MEG evidence that phrasal verbs are lexical units *Brain and Language*, **115** (3), 189-201.
154. Knoeferle, P., Crocker, M. W., & Pulvermüller, F. 2010. Embodied sentence processing. *Brain and Language*, **112** (3), 137-142.
155. Shtyrov, Y., Kujala, T., & Pulvermüller, F. 2010. Interactions between language and attention systems: early automatic lexical processing? *Journal of Cognitive Neuroscience*, **22** (7), 1465-1478.
156. Shtyrov, Y., Nikulin, V., & Pulvermüller, F. 2010. Rapid cortical plasticity underlying novel word learning. *Journal of Neuroscience*, **30** (50), 16864-16867.

2011

157. Alexandrov, A.A., Boricheva, D.O., Pulvermüller, F., & Shtyrov, Y. 2011. Strength of word-specific neural memory traces assessed electrophysiologically. *PLoS ONE* **6** (8), e22999. doi:10.1371/journal.pone.0022999
158. Berthier, M. L., & Pulvermüller, F. 2011. Neuroscience insights improve neurorehabilitation of post-stroke aphasia. *Nature Reviews Neurology*, **7** (2), 86-97.
159. Berthier, M. L., Pulvermüller, F., Dávila, G., García Casares, N., & Gutiérrez, A. 2011. Drug therapy of post-stroke aphasia: a review of current evidence. *Neuropsychology Review*, **21** (3), 302-17.
160. Berthier, M. L., García-Casares, N., Walsh, S. F., Nabrozidis, A., Juárez Ruíz de Mier, R., Green, C., Dávila, G., Gutiérrez, A., & Pulvermüller, F. (2011). Recovery from post-stroke aphasia: Lessons from brain imaging and implications for rehabilitation and biological treatments *Discovery Medicine (Baltimore)*, **12** (65), 275-89.
161. Garagnani, M., & Pulvermüller, F. 2011. From Sounds to Words: a neurocomputational model of adaptation, inhibition and memory processes in auditory change detection. *Neuroimage*, **54** (1),170-81. Erratum: *Neuroimage*. **55** (1), 435-6.
162. Hauk, O., & Pulvermüller, F. 2011. The lateralization of motor cortex activation to action words. *Frontiers in Human Neuroscience*, **5**, 149. doi: 10.3389/fnhum.2011.00149
163. Shtyrov, Y., Kimppa, L., Pulvermüller, F., & Kujala, T. 2011. Event-related potentials reflecting the frequency of unattended spoken words: A neuronal index of connection strength in lexical memory circuits? *Neuroimage*, **55** (2), 658-668.

2012

164. Pulvermüller, F. 2012. Meaning and the brain: The neurosemantics of referential, interactive, and combinatorial knowledge. *Journal of Neurolinguistics*, **25** (5), 423-459. doi: 10.1016/j.jneuroling.2011.03.004
165. Pulvermüller, F. 2012. Brain gain in cognitive neuropsychology. *Aphasiology*, **26** (12), 1481-1484.
166. Pulvermüller, F., Cook, C., & Hauk, O. 2012. Inflection in action: Semantic motor system activation to noun- and verb-containing phrases is modulated by the presence of overt grammatical markers. *Neuroimage*, **60**, 1367–1379.
167. Pulvermüller, F., Kiff, J., & Shtyrov, Y. 2012. Can language-action links explain language laterality?: An ERP study of perceptual and articulatory learning of novel pseudowords. *Cortex*, **48** (7), 471-481. doi: 10.1016/j.cortex.2011.02.006
168. Barrós-Loscertales, A., González, J., Pulvermüller, F., Ventura-Campos¹, N., Bustamante, J. C., Costumero, V., Parcet, M.A., & Ávila, C. 2012. Reading "salt" activates gustatory brain regions: fMRI evidence for semantic grounding in a novel sensory modality. *Cerebral Cortex*, **2** (11), 2554-2563. doi: 10.1093/cercor/bhr324
169. Boulenger, V., Shtyrov, Y., & Pulvermüller, F. 2012. When do you grasp the idea? MEG evidence for instantaneous idiom understanding. *Neuroimage*, **59** (4), 3502-13.
170. Cappa, S. F., & Pulvermüller, F. 2012. Language and the motor system. *Cortex*, **48** (7), 785-787. doi: 10.1016/j.cortex.2012.04.010
171. Carota, F., Moseley, R., & Pulvermüller, F. 2012. Body-part-specific representations of semantic noun categories. *Journal of Cognitive Neuroscience*, **24** (6), 1492-1509. doi: 10.1162/jocn_a_00219
172. DiFrancesco, S., Pulvermüller, F., & Mohr, B. 2012. Intensive language action therapy: the methods. *Aphasiology*, **26** (11), 1317-1351. DOI: 10.1080/02687038.2012.705815
173. Holland, R., Brindley, L., Shtyrov, Y., Pulvermüller, F., & Patterson, K. 2012. They played with the trade: MEG investigation of the processing of past tense verbs and their phonological twins. *Neuropsychologia*, **50** (14), 3713-20. doi: 10.1016/j.neuropsychologia.2012.10.019
174. Kiefer, M., & Pulvermüller, F. 2012. Conceptual representations in mind and brain: Theoretical developments, current evidence and future directions. *Cortex*, **48** (7), 805-825. doi: 10.1016/j.cortex.2011.04.006
175. Kiefer, M., Trumpp, N., Herrnberger, B., Sim, E.-J., Hoenig, K., & Pulvermüller, F. 2012. Dissociating the representation of action- and sound-

- related concepts in middle temporal cortex. *Brain and Language*, **122** (2), 120-125. doi: 10.1016/j.bandl.2012.05.0.
176. Kurland, J., Pulvermüller, F., Silva, N., Burke, K., & Andrianopoulos, M. 2012. Constrained vs. unconstrained intensive language therapy in two individuals with chronic, moderate-to-severe aphasia and apraxia of speech: Behavioral and fMRI outcomes. *American Journal of Speech and Language Pathology*, **21** (S), 65-87. doi: 10.1044/1058-0360(2012/11-0113)
177. MacGregor, L. J., Pulvermüller, F., van Casteren, M., & Shtyrov, Y. 2012. Ultra-rapid access to words in the brain. *Nature Communications*, **3**, 711. DOI: 10.1038/ncomms1715.
178. Moseley, R., Carota, F., Hauk, O., Mohr, B., & Pulvermüller, F. 2012. A role for the motor system in binding abstract emotional meaning. *Cerebral Cortex*, **22** (7), 1634-1647. doi: 10.1093/cercor/bhr238
179. Shtyrov, Y., Smith, M.L., Horner, A. J., Henson, R., Nathan, P. J., Bullmore, E. T., & Pulvermüller, F. 2012. Attention to language: Novel MEG paradigm for registering involuntary language processing in the brain. *Neuropsychologia*, **50** (11), 2605-2616. doi: 10.1016/j.neuropsychologia.2012.07.012
180. Tschentscher, N., Hauk, O., Fischer, M. H., & Pulvermüller, F. 2012. You can count on the motor system: Finger counting habits modulate motor cortex activation evoked by numbers. *Neuroimage*, **59** (4), 3139-48.
- 2013**
181. Pulvermüller, F. 2013. How neurons make meaning: Brain mechanisms for embodied and abstract-symbolic semantics. *Trends in Cognitive Sciences*, **17** (9), 458-470. doi: 10.1016/j.tics.2013.06.004
182. Pulvermüller, F. 2013. Semantics embodiment, disembodiment, and misembodiment: In search for meaning in modules and neuron circuits. *Brain and Language*, **127** (1), 86-103.
183. Bakker, I., MacGregor, L. J., Pulvermüller, F., & Shtyrov, Y. 2013. Past tense in the brain's time: Neurophysiological evidence for dual-route processing of past-tense verbs. *Neuroimage*, **71**, 187-195. doi: 10.1016/j.neuroimage.2012.12.065.
184. Chen, Y., Davis, M. H., Pulvermüller, F., & Hauk, O. 2013. Task modulation of brain responses in visual word recognition as studied using EEG/MEG and fMRI. *Frontiers in Human Neuroscience*, **7**, 376. doi: 10.3389/fnhum.2013.00376
185. Egorova, N., Shtyrov, Y., & Pulvermüller, F. 2013. Early and parallel processing of pragmatic and semantic information in speech acts:

- neurophysiological evidence. *Frontiers in Human Neuroscience*, **7**, 86. doi: 10.3389/fnhum.2013.00086.
186. Garagnani, M., & Pulvermüller, F. 2013. Neuronal correlates of decisions to speak and act: Spontaneous emergence and dynamic topographies in a computational model of frontal and temporal areas. *Brain and Language*, **127** (1), 75-85. doi: 10.1016/j.bandl.2013.02.001.
187. Moseley, R. L., Mohr, B., Lombardo, M. V., Baron-Cohen, S., Hauk, O., & Pulvermüller, F. 2013. Brain and behavioural correlates of action semantic deficits in autism. *Frontiers in Human Neuroscience*, **8** (7), 725, 1-10.
188. Moseley, R. L., Pulvermüller, F., & Shtyrov, Y. 2013. Sensorimotor semantics on the spot: Brain activity dissociates between conceptual categories within 150 ms. *Scientific Reports*, **3**, 1928. <http://60.10.59.134/nature/production/SREP-13-00657-2948dc95-139c-457d-8a62-afb22ff8d0e4.pdf>
189. Shebani, Z., & Pulvermüller, F. 2013. Moving the hands and feet specifically impairs working memory for arm- and leg-related action words. *Cortex*, **49** (1), 222-231.

2014

190. Pulvermüller, F. 2014. The syntax of action. *Trends in Cognitive Sciences*, **18**(5), 219-220. doi: 10.1016/j.tics.2014.01.001
191. Pulvermüller, F., & Garagnani, M. 2014. From sensorimotor learning to memory cells in prefrontal and temporal association cortex: A neurocomputational study of disembodiment. *Cortex*, **57**, 1-21.
192. Pulvermüller, F., Garagnani, M., & Wennekers, T. 2014. Thinking in circuits: Towards neurobiological explanation in cognitive neuroscience. *Biological Cybernetics*, **108**(5), 573-593. doi: 10.1007/s00422-014-0603-9
193. Pulvermüller, F., Moseley, R., Egorova, N., Shebani, Z., & Boulenger, V. 2014. Motor cognition – motor semantics: Action-perception theory of cognitive and communicative cortical function. *Neuropsychologia*, **55**, 71-84. doi: 10.1016/j.neuropsychologia.2013.12.002
194. Berthier, M. L., García-Casares, N., Walsh, S. F., Nabrozidis, A., Ruíz de Mier, R. J., Green, C., Dávila, G., Gutiérrez, A., & Pulvermüller, F. 2014. Recovery from post-stroke aphasia: lessons from brain imaging and implications for rehabilitation and biological treatments. *Discovery Medicine*, **12** (65), 275-289.
195. Egorova, N., Pulvermüller, F., & Shtyrov, Y. 2014. Neural dynamics of speech act comprehension: an MEG study of Naming and Requesting. *Brain Topography*, **27**, 375-392. doi: 10.1007/s10548-013-0329-3

196. Hanna, J., & Pulvermüller, F. 2014. Neurophysiological evidence for whole form retrieval of complex derived words: a mismatch negativity study. *Frontiers in Human Neuroscience*, **8**, 886. doi: 10.3389/fnhum.2014.00886
197. Hanna, J., Mejias, S., Schelstraete, M. A., Pulvermüller, F., Shtyrov, Y., & Van der Lely, H. K. 2014. Early activation of Broca's area in grammar processing as revealed by the syntactic mismatch negativity and distributed source analysis. *Cognitive Neuroscience*, **5** (2), 66-76. doi: 10.1080/17588928.2013.860087
198. Ludlow, A., Mohr, B., Whitmore, A., Garagnani, M., Pulvermüller, F., & Gutierrez, R. 2014. Auditory processing and sensory behaviours in children with autism spectrum disorders as revealed by mismatch negativity. *Brain and Cognition*, **86C**, 55-63. doi: 10.1016/j.bandc.2014.01.016
199. Mohr, B., Difrancesco, S., Evans, S., Harrington, K., & Pulvermüller, F. 2014. Changes of right-hemispheric activation after constraint-induced, intensive language action therapy in chronic aphasia: fMRI evidence from auditory semantic processing. *Frontiers in Human Neuroscience*, **8**, 919 doi: 10.3389/fnhum.2014.00919
200. Moring, N., Brandt, E. S., Mohr, B., Pulvermüller, F., & Neuhaus, A. H. 2014. ERP adaptation provides direct evidence for early mirror neuron activation in the inferior parietal lobule. *International Journal of Psychophysiology*, **94** (1), 76-83. doi: 10.1016/j.ijpsycho.2014.07.001
201. Moseley, R. L., & Pulvermüller, F. 2014. Nouns, verbs, objects, actions, and abstractions: Local fMRI activity indexes semantics, not lexical categories. *Brain and Language*, **132**, 28-42. doi: 10.1016/j.bandl.2014.03.001
202. Moseley, R. L., Pulvermüller, F., Mohr, B., Lombardo, M. V., Baron-Cohen, S., & Shtyrov, Y. 2014. Brain Routes for Reading in Adults with and without Autism: EMEG Evidence. *Journal of Autism and Developmental Disorders*, **44** (1), 137-153. doi: 10.1007/s10803-013-1858-z
203. Trumpp, N. M., Traub, F., Pulvermüller, F., & Kiefer, M. 2014. Unconscious automatic brain activation of acoustic and action-related conceptual features during masked repetition priming. *Journal of Cognitive Neuroscience*, **26** (2), 352-364. doi: 10.1162/jocn_a_00473

2015

204. Barbancho, M. A., Berthier, M. L., Navas-Sanchez, P., Davila, G., Green-Heredia, C., Garcia-Alberca, J. M. & Lara, J. P. 2015. Bilateral brain reorganization with memantine and constraint-induced aphasia therapy in chronic post-stroke aphasia: An ERP study. *Brain and Language*, **145-146**, 1-10. doi: 10.1016/j.bandl.2015.04.003

205. Chen, Y., Davis, M. H., Pulvermüller, F., & Hauk, O. 2015. Early visual word processing is flexible: evidence from spatiotemporal brain dynamics. *Journal of Cognitive Neuroscience*, **27** (9), 1738-511. doi: 10.1162/jocn_a_00815
206. Dreyer, F. R., Frey, D., Arana, S., von Saldern, S., Picht, T., Vajkoczy, P., & Pulvermüller, F. 2015. Is the motor system necessary for processing action and abstract emotion words? Evidence from focal brain lesions. *Frontiers in Psychology*, **6**, 1661. doi: 10.3389/fpsyg.2015.01661
207. MacGregor, L. J., Difrancesco, S., Pulvermüller, F., Shtyrov, Y., & Mohr, B. 2015. Ultra-rapid access to words in chronic aphasia: The effects of intensive language action therapy (ILAT). *Brain Topography*, **28** (2), 279-291. doi: 10.1007/s10548-014-0398-y
208. Miozzo, M., Pulvermüller, F., & Hauk, O. 2015. Early parallel activation of semantics and phonology in picture naming: Evidence from a multiple-linear-regression MEG study. *Cerebral Cortex*, **25** (10), 3343-3355. doi: 10.1093/cercor/bhu137
209. Moseley, R. L., Shtyrov, Y., Mohr, B., Lombardo, M. V., Baron-Cohen, S., & Pulvermüller, F. 2015. Lost for emotion words: What motor and limbic brain activity reveals about autism and semantic theory. *Neuroimage*, **104**, 413-422. doi: 10.1016/j.neuroimage.2014.09.046
210. Schomers, M., Kirilina, E., Weigand, A., Bajbouj, M., & Pulvermüller, F. 2015. Causal influence of articulatory motor cortex on comprehending single spoken words: TMS evidence. *Cerebral Cortex*, **25** (10), 3894-3902. doi: 10.1093/cercor/bhu274

2016

211. Egorova, N., Shtyrov, Y., & Pulvermüller, F. 2016. Brain basis of communicative actions in language. *Neuroimage*, **125**, 857-867. doi: 10.1016/j.neuroimage.2015.10.055.
212. Garagnani, M., & Pulvermüller, F. 2016. Conceptual grounding of language in action and perception: A neurocomputational model of the emergence of category specificity and semantic hubs. *European Journal of Neuroscience*, **43**, 721-737.
213. Grisoni, L., Dreyer, F. R., & Pulvermüller, F. 2016. Somatotopic semantic priming and prediction in the motor system. *Cerebral Cortex*, **26**, 2353–2366. doi: 10.1093/cercor/bhw026
214. Hanna, J.S., Shtyrov, Y., Williams, J., & Pulvermüller, F. 2016. Early neurophysiological indices of second language morphosyntax learning. *Neuropsychologia*, **82**, 18-30.
215. Kim, D. Y., Pyun, S.-B., Kim, E. J., Ryu, B. J., Choi, T. W., & Pulvermüller, F. 2016. Reliability and validity of the Korean version of the Communicative

Activity Log (CAL). *Aphasiology*, **30** (1), 96-105. doi:
10.1080/02687038.2015.1064084

216. 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. *Frontiers in Human Neuroscience*, **10**, 669. doi: 10.3389/fnhum.2016.00669
217. Mohr, B., MacGregor, L. J., Difrancesco, S., Harrington, K., Pulvermüller, F., & Shtyrov, Y. 2016. Hemispheric contributions to language reorganisation: An MEG study of neuroplasticity in chronic post stroke aphasia. *Neuropsychologia*, **93** (Pt B), 413-424. doi: 10.1016/j.neuropsychologia.2016.04.006
218. Mollo, G., Pulvermüller, F., & Hauk, O. 2016. Movement priming of EEG/MEG brain responses for action-words characterizes the link between language and action. *Cortex*, **74**, 262-276. doi: 10.1016/j.cortex.2015.10.021
219. Moseley, R. L., Correia, M. M., Baron-Cohen, S., Shtyrov, Y. Y., Pulvermüller, F., & Mohr, B. 2016. Reduced volume of the arcuate fasciculus in adults with high-functioning autism spectrum conditions. *Frontiers in Human Neuroscience*, **10**, 214. doi: 10.3389/fnhum.2016.00214
220. Schomers, M., & Pulvermüller, F. 2016. Is the sensorimotor cortex relevant for speech perception and understanding? An integrative review. *Frontiers in Human Neuroscience*, **10**, 435. doi: 10.3389/fnhum.2016.00435
221. 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. doi: 10.1016/j.cortex.2016.09.021

2017 and in press

222. Pulvermüller, F. 2018. Neural reuse of action perception circuits for language, concepts and communication. *Progress in Neurobiology*, in press. doi:10.1016/j.pneurobio.2017.07.001
223. Carota, F., Nili, H., Kriegeskorte, N., & Pulvermüller, F. 2017. Representational similarity mapping of distributional semantics in left inferior frontal, middle temporal and motor cortex. *Cerebral Cortex*, **27** (1), 294-309.
224. Dreyer, F. R., & Pulvermüller, F. 2018. Abstract semantics in the motor system?—An event-related fMRI study on passive reading of semantic word categories carrying abstract emotional and mental meaning. *Cortex*, in press.
225. Garagnani, M., Lucchese, G., Tomasello, R., Wennekers, T., & Pulvermüller, F. 2017. A spiking neurocomputational model of high-frequency oscillatory

- brain responses to words and pseudowords. *Frontiers in Computational Neuroscience*, **10**, 145. doi: 10.3389/fncom.2016.00145.
226. Grechuta, K., Rubio, B., Duff, A., Duarte Oller, E., Pulvermüller, F., & Verschure, P. 2017. Intensive language-action therapy in virtual reality for a rehabilitation gaming system. *International Journal on Disability and Human Development*, in press.
227. Grisoni, L., McCormick-Miller, T., & Pulvermüller, F. 2017. Neural correlates of semantic prediction and resolution in sentence processing. *Journal of Neuroscience*, **19** (18), 4848-4858.
228. Hanna, J., Cappelle, B., & Pulvermüller, F. 2017. Spread the word: MMN brain response reveals whole-form access of discontinuous particle verbs. *Brain and Language*, **175**, 86-98. doi:10.1016/j.bandl.2017.10.002
229. Lucchese, G., Hanna, J., Autenrieb, A., Miller, T. M., & Pulvermüller, F. 2017. Electrophysiological evidence for early and interactive symbol access and rule processing in retrieving and combining language constructions. *Journal of Cognitive Neuroscience*, **29** (2), 254-266. doi: 10.1162/jocn_a_01038
230. Mohr, B., Stahl, B., Berthier, M. L., & Pulvermüller, F. 2018. Intensive communicative therapy reduces symptoms of depression in chronic non-fluent aphasia. *Neurorehabilitation and Neural Repair*, in press.
231. Moseley, R. L., & Pulvermüller, F. 2018. What can autism teach us about the role of sensorimotor systems in higher cognition? New clues from studies on language, action semantics, and abstract emotional concept processing. *Cortex*, in press.
232. Schomers, M., Garagnani, M., & Pulvermüller, F. 2017. Neurocomputational consequences of evolutionary connectivity changes in perisylvian language cortex. *Journal of Neuroscience*, **37** (11), 3045–3055.
233. 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*, **98** (4), 111–129.
234. Shebani, Z., Patterson, K., Nestor, P. J., Diaz-de-Grenu, L. Z., Dawson, K., & Pulvermüller, F. 2017. Semantic word category processing in semantic dementia and posterior cortical atrophy. *Cortex*, **93**, 92-106. doi:10.1016/j.cortex.2017.04.016
235. Stahl, B., Mohr, B., Büscher, V., Dreyer, F. R., Lucchese, G., & Pulvermüller, F. 2018. Efficacy of intensive aphasia therapy in chronic stroke patients: A randomised controlled trial. *Journal of Neurology, Neurosurgery, and Psychiatry*, in press.

236. Strijkers, K., Costa, A., & Pulvermüller, F. 2017. The cortical dynamics of speaking: Lexical and phonological knowledge simultaneously recruit the frontal and temporal cortex within 200 ms. *Neuroimage*, **163**, 206-219. doi:10.1016/j.neuroimage.2017.09.041

[C] **CHAPTERS IN HANDBOOKS AND PROCEEDINGS VOLUMES, AND REFEREED PUBLICATIONS IN NATIONAL JOURNALS**

1987-1990

237. Pulvermüller, F. 1987: Kommunikative Therapie der Broca Aphasie. *Sprache-Stimme-Gehör* **11**, 115-118.
238. Pulvermüller, F. 1987: Kommunikative Aphasietherapie. Ein Beispiel. In: Kühlwein, W. (ed.): *Perspektiven der Angewandten Linguistik*. Forschungsfelder. Kongressbeiträge zur 16. Jahrestagung der Gesellschaft für Angewandte Linguistik, GAL e.V. Gunter Narr Verlag, Tübingen, 125-131.
239. Pulvermüller, F. 1988: Kommunikative Aphasietherapie mit Sprachübungsspielen. *Aphasie und verwandte Gebiete* **1** (Nr. 1), 17-43.
240. Pulvermüller, F. 1988: Aphasiker verstehen - Zur Analyse aphasischer Kommunikation. In: Spillner, B. (ed.): *Angewandte Linguistik und Computer*. Kongressbeiträge zur 18. Jahrestagung der Gesellschaft für Angewandte Linguistik, GAL e.V. Gunter Narr Verlag: Tübingen, 220-221.
241. Pulvermüller, F. 1989: Kommunikative Therapie der amnestischen Aphasie. *Sprache-Stimme-Gehör* **13**, 32-36.
242. Pulvermüller, F. 1989: Sprachliches Handeln im Alltag und in der Aphasietherapie. In: Roth, V.M. (ed.): *Kommunikation trotz gestörter Sprache. Aphasie - Schizophrenie - Demenz*. Gunter Narr Verlag: Tübingen, 87-100.
243. Pulvermüller, F. 1990: Analyse aphasischer Kommunikation. In: Ehlich, K., Koerfer, A., Redder, A. & Weingarten, R. (eds.): *Medizinische und therapeutische Kommunikation. Diskursanalytische Untersuchungen*. Westdeutscher Verlag: Opladen, 292-308.
244. Pulvermüller, F. 1990: Untersuchung kommunikativer Fähigkeiten bei Patienten mit neuropsychologischen Defiziten. In: Mellies, R., Ostermann, F. & Winnecken, A. (eds.): *Beiträge zur interdisziplinären Aphasieforschung*. Gunter Narr Verlag: Tübingen, 55-86.
245. Romero, B., Kurz, A., Haupt, M., Zimmer, R., Lauter, H., Pulvermüller, F. & Roth, V.M. 1990: Diagnostic significance of language evaluation in early stages of Alzheimer's disease. In: Maurer K., Riederer, P. & Beckmann, H.

(eds.): *Alzheimer's Disease. Epidemiology, Neuropathology, Neurochemistry, and Clinics*. Vienna, 393-399.

246. Roth, V.M. & Pulvermüller, F. 1990: Sprach-Training für Aphasiker mit Computer-Hilfe. Eine Wegbeschreibung verstehen. In: Spillner, B. (ed.): *Sprache und Politik*. Gunter Narr Verlag: Tübingen, 273-278.

1991-1995

247. Pulvermüller, F. 1991: Beschreibung kommunikativer Fähigkeiten bei schwerer Aphasie. In: Stati, S., Weigand, E. & Hundsnurscher, F. (eds.): *Dialoganalyse 3*. Niemeyer Verlag: Tübingen, 431-445.
248. Pulvermüller, F. 1991: Kommunikative Aphasietherapie in der Gruppe. In: Koerner, A. & Simons, B. (eds.): *Gruppentherapie in der Klinischen Linguistik*. Peter Lang Verlag: Frankfurt, 61-72.
249. Pulvermüller, F., Roth, V.M. & Schönle, P.-W. 1992: Neue Wege der Sprachtherapie. *Nervenarzt* **63**, 137-142.
250. Pulvermüller, F. 1992: Bausteine einer neurologisch-linguistischen Theorie. In: Rickheit, G., Mellies, R. & Winnecken, A. (eds.): *Linguistische Aspekte der Sprachtherapie: Forschung und Intervention bei Sprachstörungen*. Westdeutscher Verlag: Opladen, 21-48.
251. Pulvermüller, F. & Roth, V.M. 1992: Sprachtherapeutischer Einsatz des Mikrocomputers. In: Roth, V.M. (ed.): *Computer in der Sprachtherapie*. Gunter Narr: Tübingen, 139-149.
252. Pulvermüller, F. 1993: On connecting syntax and the brain. In: Aertsen, A. (ed.): *Brain theory: spatio-temporal aspects of brain function*. Elsevier: New York, 131-145.
253. Pulvermüller, F. & Braitenberg, V. 1993: Sprachmechanismen im Gehirn. In: Hosp, I. (ed.): *Sprachen des Menschen, Sprache der Dinge*. Bozner Treffen 1992. Südtiroler Kulturinstitut: Bozen, 47-52.
254. Pulvermüller, F. & Roth, V.M. 1993: Integrative und computerunterstützte Aphasietherapie. In: Grohnfeldt, M. (ed.): *Handbuch der Sprachtherapie. Band VI: Zentrale Sprach- und Sprechstörungen*. Spiess Verlag: Berlin, 230-250.
255. Pulvermüller, F. 1994: Syntax und Hirnmechanismen: Perspektiven einer multidisziplinären Sprachwissenschaft. *Kognitionswissenschaft* **4**, 17-31.
256. Pulvermüller, F. 1994: Sprachstörungen im Dialog. Analyse und Therapie. In: Fritz, G. & Hundsnurscher, F. (eds.): *Handbuch der Dialoganalyse*. Niemeyer Verlag: Tübingen, 393-409.

257. Pulvermüller, F., Preißl, H., Eulitz, C., Pantev, C., Lutzenberger, W., Elbert, T. & Birbaumer, N. 1994: Gamma-band responses reflect word/pseudoword processing. In: Pantev, C., Elbert, T. & Lütkenhöner, B. (eds.): *Oscillatory event-related brain dynamics*. Plenum Press: New York, 243-258.
258. Romero, B., Pulvermüller, F., Haupt, M. & Kurz, A. 1995: Pragmatische Sprachstörungen in frühen Stadien der Alzheimer-Krankheit. *Zeitschrift für Neuropsychologie* **6**, 29-42.
259. Pulvermüller, F., Lutzenberger, W., Mohr, B., Preißl, H., Eulitz, C., Pantev, C., Elbert, T. & Birbaumer, N. 1995: Evoked gamma-band responses in the EEG and MEG. In: Heinze, H.J., Münte, T.F., Scheich, H. & Mangun, G.R. (eds.): *Mapping cognition in time and space: combining EEG, MEG with functional imaging*. Birkhäuser: Boston.

1996-2000

260. Pulvermüller, F. 1996: Word processing and representation in the human brain. Institut d'Estudis Catalans (ed.): *International workshop on language, brain and verbal behavior: Neurobiological aspects of linguistic capacities and language processing*. Scientific office, Institut d'Estudis Catalans: Barcelona, 63-76.
261. Pulvermüller, F., Preißl, H., Lutzenberger, W. & Birbaumer, N. 1997: Gestalt und Sprache als rhythmische Gehirnprozesse. In: Kasten, E., Kreutz, M.R. & Sabel, B.A. (eds.): *Jahrbuch der Medizinischen Psychologie* **12**: *Neuropsychologie in Forschung und Praxis*. Hogrefe: Göttingen, 55-65.
262. Pulvermüller, F. 1997: Psychophysiologie der Wortverarbeitung: Modelle - Daten - Klinische Perspektive. Mandl, H. (ed.): *Bericht über den 40. Kongreß der Deutschen Gesellschaft für Psychologie in München 1996, Schwerpunktthema Wissen und Handeln*, Hogrefe, Verlag für Psychologie: Göttingen, 812-818.
263. Pulvermüller, F. 1998: Sprache im Gehirn: Neurobiologisch Überlegungen, psychophysiologische Befunde und psycholinguistische Implikationen. *Colloquia Academica. Akademievorträge junger Wissenschaftler N1997*. Akademie der Wissenschaften und der Literatur: Mainz, 7-44.
264. Pulvermüller, F. 2000: On distributed cell assemblies, high frequencies, and the significance of EEG/MEG recordings. In: Miller, R. (ed.): *Time and the brain*. Harwood Academic Publishers: Amsterdam, 241-249.

2001-2005

265. Pulvermüller, F. 2001: Connectionist models of language processing. In Baltes, P.B. & Smelser, N.J. (eds.): *International Encyclopedia of Social and Behavioral Sciences*. Elsevier: New York.

266. Pulvermüller, F. 2001: Imaging language in the brain. In: Amit, D. (ed.): *Frontiers in Neurobiology. An international handbook. Volume 5: Intelligence systems*. Rome: Encyclopaedia Italiana Press.
267. Pulvermüller, F. 2001: How and where are words represented and processed in the brain? In: Argente, J.A. (ed.): *Proceedings of the 1st international workshop on language, brain and verbal behavior*. New York: Academic Press.
268. Assadollahi, R., & Pulvermüller, F. 2001. Neural network classification of word evoked neuromagnetic brain activity. In Wermter, S., Austin, J. & Willshaw, D. (Eds.), *Lecture notes in Artificial Intelligence: Emergent neurocomputational architectures based on neuroscience*. Springer: Heidelberg, 311-320.
269. Müller, M.M. & Pulvermüller, F. 2002: Gamma-Band-Aktivität als Indikator kognitiver Prozesse im menschlichen Gehirn (Gamma band activity as an indicator of cognitive processes in the human brain). In: Elbert, T. (ed.): *Enzyklopädie der Psychologie, Band 6, Biologische Grundlagen der Psychologie (Encyclopedia of psychology, Vol 6, Biological foundations of psychology)*. Hogrefe Verlag, Göttingen, 87-124.
270. Neininger, B., Pulvermüller, F., Elbert, T., Rockstroh, B. & Mohr, B. 2004: Intensivierung, Fokussierung und Verhaltensrelevanz als Prinzipien der Neuropsychologischen Rehabilitation und ihre Implementation in der Therapie chronischer Aphasie – eine Übersichtsarbeit. [Constraint, focussing, behavioral relevance: Principles of neuropsychological rehabilitation and their implementation in aphasia therapy after chronic stroke: A review.] *Zeitschrift für Neuropsychologie*, 15, 219-232.
271. Knoblauch, A., & Pulvermüller, F. 2005. Sequence detector networks and associative learning of grammatical categories. In S. Wermter & G. Palm & M. Elshaw (Eds.), *Biomimetic neural learning for intelligent robots*. Berlin: Springer, 31-53.
272. Wermter, S., Weber, C., Elshaw, M., Gallese, V., & Pulvermüller, F. 2005. Neural grounding of robot language in action. In S. Wermter & G. Palm & M. Elshaw (Eds.), *Biomimetic neural learning for intelligent robots* (pp. 162-181). Berlin: Springer.

2006-2010

273. Pulvermüller, F. 2007. Word processing in the brain as revealed by neurophysiological imaging using EEG and MEG. In G. Gaskell (Ed.), *Handbook of Psycholinguistics*. Oxford: Oxford University Press, 119-140.
274. Pulvermüller, F. & Shtyrov, Y. 2007. The mismatch negativity as an objective tool for studying higher language functions. In A. S. Meyer, L.R. Wheeldon &

- A. Krott (Eds.), Automaticity and control in language processing. Hove and New York: Psychology Press, 217-244.
275. Pulvermüller, F. 2008. Brain embodiment of category specific semantic memory circuits. In G. Semin (Ed.), *Embodied grounding: Social, cognitive, affective, and neuroscientific approaches*. Cambridge: Cambridge University Press, 71-97.
276. Pulvermüller, F. 2008. Grounding language in the brain. In M. de Vega, A. Graesser & A. M. Glenberg (Eds.), *Symbols, embodiment, and meaning*. Oxford: Oxford University Press, 85-116.
277. Pulvermüller, F. 2008. Mechanistic language circuits: What can be learned? What is prewired? In A. D. M. Smith, K. Smith & R. Ferrer i Cancho (Eds.), *Evolution of Language*. pp. 482-484.
278. Shtyrov, Y., & Pulvermüller, F. 2009. Are you listening? Language outside the focus of attention. In M. Stamenov (Ed.), *Advances in Consciousness Research*. Amsterdam: John Benjamins.
279. Shtyrov, Y., & Pulvermüller, F. 2009. Rapid, automatic and parallel language processing in the human brain: neurophysiological data using the mismatch negativity (MMN). In M. Horne (Ed.), *Brain Talk*. Lund: University of Lund.

2011—2015 and in press

280. Pulvermüller, F. 2011. Braucht man die Sprache, um das Hirn zu verstehen? . In A. Schüz (Ed.), *Tentakeln des Geistes. Begegnungen mit Valentin Braitenberg*. Arunda, Vol. 81, 129-141. Bozen: Edition Raetia.
281. Pulvermüller, F., Cappelle, B., & Shtyrov, Y. 2013. Brain basis of words, constructions, and grammar. In T. Hoffmann, & G. Trousdale, (Eds.), *The Oxford Handbook of Construction Grammar*. Oxford University Press, Oxford, 397-416.
282. Moseley, R., Kiefer, M., & Pulvermüller, F. 2015. Grounding and embodiment of concepts and meaning. In Y. Coello & M. H. Fischer (Eds.), *Foundations of Embodiment Cognition: Volume 1: Perceptual and Emotional Embodiment*. London, New York: Routledge, 93-113.

2016— and in press

283. Pulvermüller, F., & Fadiga, L. 2016. Brain language mechanisms built on action and perception. In G. Hickok & S. Small (Eds.), *Handbook of Neurobiology of Language*, Elsevier, Amsterdam, 311-324. doi: 10.1016/B978-0-12-407794-2.00026-2.
284. Pulvermüller, F., Mohr, B., & Taub, E. 2016. Constraint-induced aphasia therapy: A neuroscience-centered translational method. In G. Hickok & S.

- Small (Eds.), *Handbook of Neurobiology of Language*, Elsevier, Amsterdam, 1025-1034. doi: 10.1016/B978-0-12-407794-2.00082-1.
285. Pulvermüller, F. 2016. Evidenzbasierte Forschung zur Wirksamkeit von Sprachtraining. In H. Böttcher & M. Sambanis (Eds.), *Fokus on Evidence: Fremdsprachendidaktik trifft Neurowissenschaft*. Tübingen: Narr Francke Attempto Verlag, 77-100.
286. Kilner, J., Hommel, B., Bar, M., Barsalou, L.W., Friston, K.J., Jost, J.; Maye, A., Metzinger, T., Pulvermüller, F., Sànchez-Fibla, M., Tsotsos, J.K., & Vigliocco G. 2016. Action-oriented models of cognitive processing: A little less cogitation, a little more action please. In A. K. Engel, K. J. Friston & D. Kragic (Eds.), *The pragmatic turn: toward action-oriented views in cognitive science*. MIT Press: Boston, MA, 159-172.
287. Pulvermüller, F. 2016. Language, Action, Interaction: Neuropragmatic Perspectives on Symbols, Meaning, and Context-Dependent Function. In A. K. Engel, K. J. Friston & D. Kragic (Eds.), *The pragmatic turn: toward action-oriented views in cognitive science*. MIT Press: Boston, MA, 139-157.
288. Moseley, R. L., Mohr, B., Lombardo, M. V., Baron-Cohen, S., Hauk, O., & Pulvermüller, F. 2017. Brain and behavioral correlates of action semantic deficits in autism. In M. L. Seghier, U. Maurer, & G. Xue (Eds.), *What makes written words so special to the brain?* (pp. 195-204). Lausanne: Frontiers Media SA.