

Björn Rasch, Prof. Dr. rer. nat.

Division of Cognitive Biopsychology and Methods, University of Fribourg

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PERSONAL INFORMATION

Born on the 04.01.1975 in Lüneburg, Germany, married, two daughters

EDUCATION

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| 2011 | Venia Docendi in Psychology (Habilitation), University of Basel, Switzerland |
| 2008 | Doctor of Science (Dr. rer. nat., summa cum laude), University of Trier, Germany |
| 2003 | Diploma (equivalent to M.Sc.), Psychology, University of Trier, Germany |

PROFESSIONAL APPOINTMENTS

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| 2013 – present | Full professor of Cognitive Biopsychology and Methods at the University of Fribourg, Switzerland |
| 2011 - 2013 | SNSF Professor of the Swiss National Science Foundation (SNSF) at the University of Zürich, Switzerland |
| 2008 – 2011 | Lecturer and Research Scientist, Division of Cognitive Neuroscience (<i>Prof. De Quervain</i>) and Division of Molecular Psychology (<i>Prof. Papassotiropoulos</i>), University of Basel, Switzerland |
| 2003 – 2008 | Research Scientist, Institute for Neuroendocrinology (<i>Prof. Born</i>), University of Lübeck, Germany |

FELLOWSHIPS AND AWARDS

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| 2015 | ERC-Starting Grant |
| 2015 | Vontobel-Price for research in the elderly, University of Zurich |
| 2011 | SNSF professorship of the Swiss National Science Foundation (SNSF) |
| 2008 | 2-year post-doc scholarship, Deutsche Forschungsgemeinschaft (DFG) |
| 2007 | Young Scientist Award (Fachgruppe „Biologische Psychologie und Neuropsychologie“ der Deutschen Gesellschaft für Psychologie (DGPs)) |

POSITIONS OFFERED

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| 2013 | Full Professor for Biological and Clinical Psychology, University of Trier, Germany |
| 2011 | Team leader position at the RIKEN Brain Science Institute, Tokyo, Japan (tenure-track) |
| 2011 | Assistance professor for "Learning and Plasticity in the old Age" at the University of Zürich, Switzerland |

SUPERVISED PHD STUDENTS AND POST DOCS

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| 2019 – present | J. Beck, S. Combertaldi, M. Cordi, M. Hülsemann, A.-L. Klaassen, E. van Poppel |
| 2011 – 2019 | S. Ackermann, M. Göldi, G. Gvozdanovic, M. Lehmann, M. Lüthi, M. Munz, J. Rihm, T. Schreiner |

TEACHING ACTIVITIES

2013 – present	Lectures on General Psychology I + II and Research Methods in Psychology, regular seminars
2008 – 2013	Participation in the Master-Modul “Cognitive Psychology and Cognitive Neuroscience”, Univ. of Zurich Regular seminars for psychology students on Memory, Sleep, and neuroscientific methods (fMRI, EEG)

INSTITUTIONAL RESPONSIBILITIES

2016 - 2018	President of the department of psychology, University of Fribourg, Switzerland
2014 - 2016	Vice-president of the department of psychology, University of Fribourg, Switzerland
2014 - 2016	President of the internal ethical review board of the Department of Psychology, University of Fribourg

AD HOC REVIEWER

Organizations:	German Research Foundation (DFG), Volkswagenstiftung (D), Swiss National Science Foundation (SNSF), Alberta Univ. (USA), BBSRC (UK), Netherlands Organisation of Scientific Research etc.
Journals:	Science, Nature Neurosci., Neuron, PNAS, J. Neurosci, Biol. Psychiatry, Current Biology, Biol. Psychology, Neuroimage, Sleep, PlosOne, Psychoneuroendocrinology, etc.
Editor:	Special Issue Guest Editor for Neurobiology of Learning and Memory, and Brain and Language, Review Editor for Frontiers in Human Neuroscience,

MEMBERSHIPS

Deutsche Gesellschaft für Psychologie (DGPs); Deutsche Gesellschaft für Psychophysiologie und ihre Anwendungen (DGPA), Schweizerische Gesellschaft für Psychologie (SGP), Swiss Society of Neuroscience; Swiss Society of Sleep Research, Sleep Medicine and Chronobiology; Milton Erickson Society for Clinical Hypnosis (MEG)

FUNDING (COMPETITIVE, AS PRINCIPLE INVESTIGATOR)

2018	SNSF Digital Lives (<i>with A. Fahr</i>)	CHF:	238'000.-
2015	ERC-Starting Grant (<i>Acronym: Memo Sleep</i>)	EURO:	1'500'000.-
2015	SNSF project (<i>sleep and vocabulary learning</i>)	CHF:	405'000.-
2014	University of Fribourg	CHF:	62'500.-
2012	Subproject in CRPP “Sleep and Health”	CHF:	525'000.-
2011	SNSF professorship (<i>memory reactivation and sleep</i>)	CHF:	1'600'000.-
2011	SNSF project (<i>neural correlates of self-control</i>)	CHF:	268'900.-
2009	German Research Foundation (DFG)	EURO:	370'000.-
2009	Freiwillige Akademische Gesellschaft, Univ. Basel	CHF:	112'000.-
	Sum total	CHF:	5.4 Mio.

PUBLICATIONS

Total: 89 peer reviewed articles, 15 as first, 44 as last/corresponding author; 3 Books; 3 Book Chapters
h-Index 40 / 29; citations 9262 / 4236 (*Google Scholar / publons*); Average citations per article: 38.9 (*publons*)

Five most important publications

- Rasch, B., Büchel, C., Gais, S., & Born, J. (2007). Odor cues during slow-wave sleep prompt declarative memory consolidation. *Science*, 315, 1426-1429.
- Rasch, B., Pommer, J., Diekelmann, S., & Born, J. (2008). Pharmacological REM sleep suppression paradoxically improves rather than impairs skill memory. *Nature Neuroscience*. 12(4). 396-397.
- Diekelmann, S., Büchel, C., Born, J. & Rasch, B. (2011). Labile or stable: opposing consequences for memory when reactivated during waking and sleep. *Nature Neuroscience*. 14(3):381-6.
- Schreiner, T. & Rasch, B. (2015). Boosting Vocabulary Learning by Verbal Cueing During Sleep. *Cerebral Cortex* 25(11):4169-79.
- Schreiner, T., Lehmann, M. & Rasch, B. (2015). Auditory feedback blocks memory benefits of cueing during sleep. *Nature Communications*. 6:8729.

List of Publications B. Rasch (Juli 2020)

PEER-REVIEWED ARTICLES

2020

- Muehlroth BE., Rasch B., Werkle-Bergner M.. Episodic memory consolidation during sleep in healthy aging. *Sleep Medicine Reviews*. 2020 Aug; doi: 10.1016/J.SMRV.2020.101304
- Erlacher D., Schmid D., Schuler S., Rasch B. Inducing lucid dreams by olfactory-cued reactivation of reality testing during early-morning sleep: A proof of concept. *Conscious Cogn*. 2020 Jun 19;83:102975. doi: 10.1016/j.concog.2020.102975. Online ahead of print. PMID: 32570154
- Rasch B. Sleep and Plasticity: Do We Consolidate Memories Separately in Each Hemisphere? *Curr Biol*. 2020 Apr 20;30(8):R349-R351. doi: 10.1016/j.cub.2020.02.079. PMID: 32315633
- Muehlroth BE., Rasch B., Werkle-Bergner M.. Episodic memory consolidation during sleep in healthy aging. M. *Sleep Med Rev*. 2020 Mar 16;52:101304. doi: 10.1016/j.smrv.2020.101304. Online ahead of print. PMID: 32278267
- Wilhelm I., Schreiner T., Beck J., Rasch B. No effect of targeted memory reactivation during sleep on retention of vocabulary in adolescents. *Sci Rep*. 2020 Mar 6;10(1):4255. doi: 10.1038/s41598-020-61183-z. PMID: 32144326
- Cordi MJ., Rossier L., Rasch B. Hypnotic suggestions given before nighttime sleep extend slow-wave sleep as compared to a control text in highly hypnotizable subjects. *Int J Clin Exp Hypn*. 2020 Jan-Mar; 68(1):105-129. doi: 10.1080/00207144.2020.1687260

2019

- Muehlroth BE., Sander MC., Fandakova Y., Grandy TH., Rasch B., Lee Shing Y., Werkle-Bergner M.. Memory quality modulates the effect of aging on memory consolidation during sleep: Reduced maintenance but intact gain. *Neuroimage*. 2019 Dec 25;116490. doi: 10.1016/j.neuroimage.2019.116490 . [Epub ahead of print]
- Hülsemann MJ., Naumann E., Rasch B. Quantification of Phase-Amplitude Coupling in Neuronal Oscillations: Comparison of Phase-Locking Value, Mean Vector Length, Modulation Index, and Generalized-Linear-Modeling-Cross-Frequency-Coupling. *Front Neurosci*. 2019 Jun 7;13:573. doi: 10.3389/fnins.2019.00573.
- Cordi MJ., Ackermann S., Rasch B. Effects of Relaxing Music on Healthy Sleep. *Sci Rep*. 2019 Jun 24;9(1):9079. doi: 10.1038/s41598-019-45608-y.
- Göldi M., Rasch B. Effects of targeted memory reactivation during sleep at home depend on sleep disturbances and habituation. *NPJ Sci Learn*. 2019 May 2;4:5. doi: 10.1038/s41539-019-0044-2.
- Gvozdanovic G., Stämpfli P., Seifritz E., Rasch B. Structural brain differences predict early traumatic memory processing. *Psychophysiology*. 2019 Mar 2:e13354. doi: 10.1111/psyp.13354.
- Göldi M., van Poppel E., Rasch B., Schreiner T. (2019) Increased neuronal signatures of targeted memory reactivation during slow-wave up states. *Sci Rep*. 2019 Feb 25;9(1):2715. doi: 10.1038/s41598-019-39178-2
- Muehlroth B., Sander M., Fandakova Y., Grandy T., Rasch B., Shing Y., Werkle-Bergner M. (2019) Precise Slow Oscillation-Spindle Coupling Promotes Memory Consolidation in Younger and Older Adults. *Sci Rep*. 2019 Feb 13;9(1):1940. doi: 10.1038/s41598-018-36557-z

Ackermann S., Cordi M., La Marca R., Seifritz E., Rasch B. (2019) Psychosocial Stress Before a Nap Increases Sleep Latency and Decreases Early Slow-Wave Activity. *Front. Psychol.* Jan;25: doi: 10.3389/fpsyg.2019.00020

2018

Rasch B., (2018). Let's replay. *Elife* 2018 Dec 18;7: pii: e43832. doi: 10.7554/eLife.43832

Renevey P., Delgado-Gonzalo R., Lemkaddem A., Verjus C., Combertaldi S., Rasch B., Leeners B., Dammeier F., Kuubler F..(2018). Respiratory and cardiac monitoring at night using a wrist wearable optical system. *Conf Proc IEEE Eng Med Biol Soc.* 2018 Jul; 2018:2861-2864. doi: 10.1109/EMBC.2018.8512881

Schreiner T., Doeller CF., Jensen O., Rasch B., Staudigl T.. Theta Phase-Coordinated Memory Reactivation Reoccurs in a Slow-Oscillatory Rhythm during NREM Sleep. *Cell Rep.* 2018 Oct 9;25(2):296-301. doi: 10.1016/j.celrep.2018.09.037

Cordi MJ., Schreiner T. & Rasch B. (2018). No effect of vocabulary reactivation in older adults. *Neuropsychologia.* Aug;25: 119253-261. doi: 10.1016/j.neuropsychologia.2018.08.021 Epub 2018 Aug 25.

Klinzing JG., Kugler S., Soekadar SR., Rasch B., Born J. & Diekelmann S. (2018). Odor cueing during slow-wave sleep benefits memory independently of low cholinergic tone. *Psychopharmacology (Berl).* 2018 Jan;235(1):291-299. doi: 10.1007/s00213-017-4768-5. Epub 2017 Nov 8.

Schoch SF., Cordi MJ., Schredl M. & Rasch B. (2018). The effect of dream report collection and dream incorporation on memory consolidation during sleep. *J Sleep Res.* Aug 8:e12754.doi: 10.1111/jsr.12754. [Epub ahead of print].

Seibold M., Rasch B., Born J. & Diekelmann S. (2018). Reactivation of interference during sleep does not impair ongoing memory consolidation. *Memory.* Mar;26(3):377-384. doi: 10.1080/09658211.2017.1329442. Epub 2017 May 24.

2017

Groch S., Schreiner T., Rasch B., Huber R. & Wilhelm I. (2017). Prior knowledge is essential for the beneficial effect of targeted memory reactivation during sleep. *Sci Rep.* 7:39763. doi: 10.1038/srep39763.

Groch S., Preiss A., McMakin DL., Rasch B., Walitza S., Huber R. & Wilhelm I. (2017). Targeted Reactivation during Sleep Differentially Affects Negative Memories in Socially Anxious and Healthy Children and Adolescents. *J Neurosci.* 37(9):2425-2434. doi: 10.1523/JNEUROSCI.1912-16.2017. Epub 2017 Jan 31.

Gvozdanovic GA., Stämpfli P., Seifritz E. & Rasch B. (2017). Neural correlates of experimental trauma memory retrieval. *Hum Brain Mapp.* Apr 17. doi: 10.1002/hbm.23613. [Epub ahead of print].

Rasch B. (2017). Sleep and language learning. *Brain Lang.* Apr;167:1-2. doi: 10.1016/j.bandl.2017.02.002. Epub 2017 Mar 3.

Schmidt B., Mussel P., Osinsky R., Rasch B., Debener S., Hewig J. (2017). Work first then play: Prior task difficulty increases motivation-related brain responses in a risk game. *Biol Psychol.* May;126:82-88. doi: 10.1016/j.biopsycho.2017.04.010. Epub 2017 Apr 23

Schoch SF., Cordi MJ. & Rasch B. (2017). Modulating influences of memory strength and sensitivity of the retrieval test on the detectability of the sleep consolidation effect. *Neurobiol Learn Mem.* 2017 Nov;145:181-189. doi: 10.1016/j.nlm.2017.10.009. Epub 2017 Oct 10.

2016

Diekelmann S., Born J. & Rasch B. (2016). Increasing Explicit Sequence Knowledge by Odor Cueing during Sleep in Men but not Women. *Front. Behav. Neurosci.*

Groch S., McMakin D., Guggenbühl P., Rasch B., Huber R., Wilhelm I. (2016). Memory cueing during sleep modifies the interpretation of ambiguous scenes in adolescents and adults, *Dev Cogn Neurosci.* 17:10-8.

Jurewicz K., Cordi MJ., Staudigl T. & Rasch B. (2016). No Evidence for Memory Decontextualization across One Night of Sleep. *Front Hum Neurosci.* 10:7.

Kleim B., Wysokowsky J., Schmid N., Seifritz E. & Rasch B. (2016). Effects of Sleep After Experimental Trauma on Intrusive Emotional Memories. *Sleep.* pii: sp-00734-15.

Klinzing JG., Rasch B., Born J. & Diekelmann S. (2016). Sleep's role in the reconsolidation of declarative memories. *Neurobiol Learn Mem.* 136:166-173. doi: 10.1016/j.nlm.2016.10.004.

- Lehmann M., Schreiner T., Seifritz E. & Rasch B. (2016). Emotional arousal modulates oscillatory correlates of targeted memory reactivation during NREM, but not REM sleep. *Sci Rep.* 6:39229. doi: 10.1038/srep39229
- Lehmann M., Seifritz E. & Rasch B. (2016). Sleep benefits emotional and neutral associative memories equally, *Somnologie*
- Luethi Ms., Friese M., Binder J. Boesiger P., Luechinger R. & Rasch B. (2016). Motivational incentives lead to a strong increase in lateral prefrontal activity after self-control exertion. *Soc Cogn Affect Neurosci.* Oct;11(10):1618-26. doi: 10.1093/scan/nsw073.
- Nair J., Klaassen AL., Poirot J., Vyssotski A., Rasch B. & Rainer G. (2016). Gamma band directional interactions between basal forebrain and visual cortex during wake and sleep states. *J Physiol Paris.* pii: S0928-4257(16)30033-X. doi: 10.1016/j.jphysparis.2016.11.011.
- Rihm JS, Sollberger SB, Soravia LM & Rasch B. (2016). Re-presentation of Olfactory Exposure Therapy Success Cues during Non-Rapid Eye Movement Sleep did not Increase Therapy Outcome but Increased Sleep Spindles. *Front Hum Neurosci.* 10:340.
- Schreiner T. & Rasch B. (2016) To gain or not to gain - The complex role of sleep for memory: Comment on Dumay. *Cortex.* pii: S0010-9452(16)30165-4.
- Schreiner T. & Rasch B. (2016) The beneficial role of memory reactivation for language learning during sleep: A review. *Brain Lang.* pii: S0093-934X(15)30107-3.

2015

- Ackermann S., Hartmann F., Papassotiropoulos A., de Quervain D.J., & Rasch B. (2015). No Associations between Interindividual Differences in Sleep Parameters and Episodic Memory Consolidation. *Sleep.* 38(6):951-9
- Cordi, M.; Hirsiger, S.; Merillat, S. & Rasch, B. (2015). Improving sleep and cognition by hypnotic suggestion in the elderly. *Neuropsychologia.* 69:176-82.
- Kleim, B., Wilhelm FH., Temp I., Margraf J., Wiederhold BK. & Rasch B. (2015). Letter to the Editor: Simply avoiding reactivating fear memory after exposure therapy may help to consolidate fear extinction memory - a reply. *Psychol Med.* 45(4):887-8
- Rihm, J. & Rasch, B. (2015). Replay of conditioned stimuli during late REM and stage N2 sleep influences affective tone rather than emotional memory strength. *Neurobiol. Learn. Mem.* 122:142-51.
- Schreiner, T. & Rasch, B. (2015). Boosting Vocabulary Learning by Verbal Cueing During Sleep. *Cerebral Cortex* 25(11):4169-79.
- Schreiner T, Göldi M, Rasch B. (2015). Cueing vocabulary during sleep increases theta activity during later recognition testing. *Psychophysiology.* 52(11):1538-43.
- Schreiner, T. & Rasch, B. (2015). Cueing vocabulary during daytime wake has no effect on memory. *Somnologie.* 19 (2), 133-140.
- Schreiner, T., Lehmann, M. & Rasch, B. (2015). Auditory feedback blocks memory benefits of cueing during sleep. *Nature Communications.* 6:8729.
- Soravia LM, Nakataki M, Federspiel A, Schwab S, Horn H, Schmitt W, Jann K, Dierks T, Strik W, Wiest R, Rasch B, Heinrichs M, de Quervain D. (2015). The neural correlates of the fear-reducing effects of glucocorticoids in phobia. *Psychoneuroendocrinology.* 61:46-7.

2014

- Ackermann S. & Rasch B. (2014). Differential Effects of Non-REM and REM Sleep on Memory Consolidation? *Curr Neurol Neurosci Rep.* 14(2):430.
- Cordi, C., Schlarb, A. & Rasch, B. (2014). Deepening sleep by hypnotic suggestion. *Sleep.* 37(6):1143-52.
- Cordi, M., Ackerman, S., Bes, F.W., Hartmann, F., Konrad, B.N., Genzel, L., Pawlowski, M., Steiger, A., Schulz, H., Rasch, B., Dresler, M. (2014). Lunar cycle effect on sleep and the file drawer problem. *Current Biology* 24(12): R549-50.
- Cordi MJ., Diekelmann S., Born J., Rasch B. (2014). No effect of odor-induced memory reactivation during REM sleep on declarative memory stability. *Front Syst Neurosci.* 8:157

- Göder, R. Nissen, C., & Rasch, B. (2014). [Sleep, learning and memory: relevance for psychiatry and psychotherapy.] *Nervenarzt* 5(1):50-6.
- Helversen, B., Karllson, L, Rasch, B. & Rieskamp, J. (2014) Neural Substrates of Similarity and Rule-based Strategies in Judgment. *Frontiers in Human Neuroscience* 8:809.
- Kleim B, Wilhelm FH, Temp L, Margraf J, Wiederhold BK & Rasch B. (2014). Sleep enhances exposure therapy. *Psychol. Med.* 44(7):1511-9.
- Luksys G, Ackermann S, Coynel D, Fastenrath M, Gschwind L, Heck A, Rasch B. Spalek K, Vogler C, Papassotiropoulos A, de Quervain D. (2014). BAIAP2 Is Related to Emotional Modulation of Human Memory Strength. *PLoS One.* 2;9(1):e83707.
- Rihm, J., Diekelmann, S., Born, J., & Rasch, B. (2014). Reactivating Memories During Sleep by Odors: Odor-Specificity and Associated Changes in Sleep Oscillations. *J Cogn Neurosci.* 26(8):1806-18.

2013

- Ackermann S, Hartmann F, Papassotiropoulos A, de Quervain DJ & Rasch B. (2013). Associations between Basal Cortisol Levels and Memory Retrieval in Healthy Young Individuals. *J Cogn Neurosci.* 25(11):1896-907.
- Ackermann S., Heck A., Rasch B., Papassotiropoulos A., de Quervain DJ. (2013) The Bcl polymorphism of the glucocorticoid receptor gene is associated with emotional memory performance in healthy individuals. *Psychoneuroendocrinology* 38(7):1203-7.
- Bosch OG, Rihm JS, Scheidegger M, Landolt HP, Stämpfli P, Brakowski J, Esposito F, Rasch B. Seifritz E. (2013) Sleep deprivation increases dorsal nexus connectivity to the dorsolateral prefrontal cortex in humans. *Proc Natl Acad Sci U S A.* 26;110(48):19597-602.
- Friese, M., Binder, J., Luechinger, R., Boesiger, P. & Rasch, B. (2013). Exerting self control exhausts the prefrontal cortex. *PlosOne* 8(4):e60385.
- Papassotiropoulos A., Stefanova E., Vogler C., Gschwind L., Ackermann S., Spalek K., Rasch B., Heck A., Aerni A., Hanser E., Demougin P., Huynh KD., Luechinger R., Klarhöfer M., Novakovic I., Kostic V., Boesiger P., Scheffler K., de Quervain DJ. (2013). A genome-wide survey and functional brain imaging study identify CTNBL1 as a memory-related gene. *Mol Psychiatry* 18(2):264.
- Rasch, B. & Born, J. (2013). About sleep's role in memory. *Physiological Reviews* 93:681-766.
- Wascher E, Rasch B. Sängler J, Hoffmann S, Schneider D, Rinckenauer G, Heuer H, Gutberlet I. (2013). Frontal theta activity reflects distinct aspects of mental fatigue. *Biol Psychol.* 2;96C:57-65.
- Wilhelm, I., Rose, M., Imhof, K.I., Rasch, B., Buchel, C. & Born, J. (2013). The sleeping child outplays the adult's capacity to convert implicit into explicit knowledge. *Nature Neurosci.* 16(4):391-3.

2012

- Binder, J., de Quervain, D., Friese, M., Luechinger, R., Boesiger, P., Rasch, B. (2012). Emotion suppression reduces hippocampal activity during successful memory encoding. *Neuroimage* 63(1):525-32.
- Diekelmann S., Biggel S., Rasch B., Born J. (2012) Offline consolidation of memory varies with time in slow wave sleep and can be accelerated by cuing memory reactivations. *Neurobiol Learn Mem.* 98(2):103-11.
- Ackermann, S., Spalek, K., Rasch, B., Gschwind, L., Coynel D., Fastenrath, M., Papassotiropoulos, A., de Quervain, D. (2012). Testosterone levels in healthy men are related to amygdala reactivity and memory performance. *Psychoneuroendocrinology* 37(9):1417-24.
- De Quervain, D., Kolassa, T., Ackermann, S., Aerni, A., Boesiger, P., Demougin, P., Elbert, T., Ertl, V., Gschwind, L., Hadziselimovic, N., Hanser, E., Heck, A., Hieber, P., Huynh, P., Klarhöfer, M., Luechinger, R., Rasch, B., Scheffler, K., Spalek, K., Stippich, C., Vogler, C., Vukojevice, V., Stetak, A. & Papassotiropoulos, P. (2012). PKC is genetically linked to memory capacity in nontraumatized individuals and to traumatic memory and PTSD in genocide survivors. *Proc. Natl. Acad. Sci. U.S.A.* 109(22):8746-51.

2011

- Rasch, B., Dodt, C., Sayk, F., Mölle, M. & Born, J. (2011). No elevated plasma catecholamine levels during sleep in newly diagnosed, untreated hypertensives. *PlosOne* 6(6):e21292

- Diekelmann, S., Büchel, C., Born, J. & Rasch, B. (2011). Labile or stable: opposing consequences for memory when reactivated during waking and sleep. *Nature Neuroscience*. 14(3):381-6.
- Gais, S., Rasch, B., Dahmen, J.C., Sara, S., Born, J. (2011). The Memory Function of Noradrenergic Activity in Non-REM Sleep. *J.Cogn Neurosci.*, 23(9):2582-92.
- Heck A, Vogler C, Gschwind L, Ackermann S, Auschra B, Spalek K, Rasch B, de Quervain D, Papassotiropoulos A (2011). Statistical epistasis and functional brain imaging support a role of voltage-gated potassium channels in human memory. *PLoS One*. 6(12):e29337.

2010

- Rasch, B., Spalek, K., Buholzer, S., Luechinger, R., Boesiger, P., de Quervain, D.J.-F. & Papassotiropoulos, A. (2010). Aversive stimuli lead to differential amygdala activation and connectivity patterns depending on Catechol-O-Methyltransferase Val158Met genotype. *Neuroimage*. 52(4):1712-9.
- Rasch, B., Papassotiropoulos, A. & de Quervain, D. (2010). Imaging genetics of cognitive functions: Focus on episodic memory. *Neuroimage*. 53(3), 870-7.
- Hallschmid, M., Jauch-Chara, K., Korn, O., Mölle, M., Rasch, B., Born, J., Schultes, B. & Kern, W. (2010). Euglycemic infusion of insulin detemir compared to human insulin appears to increase direct current brain potential response and reduces food intake while inducing similar systemic effects. *Diabetes*. 9, 1101-7.

2009

- Rasch, B., Spalek, K., Buholzer, S., Luechinger, R., Boesiger, P., Papassotiropoulos, A., de Quervain, D. (2009). A genetic variation of the noradrenergic system is related to differential amygdala activation during encoding of emotional memories. *Proc.Natl.Acad.Sci.U.S.A.* 106(45). 19191-6.
- Rasch, B., Gais, S. & Born, J. (2009). Impaired off-line consolidation of motor memories after combined blockade of cholinergic receptors during REM sleep-rich sleep. *Neuropsychopharmacology*. 34(7), 1843-63.
- Bly, B.M., Carrion, R.E. & Rasch, B. (2009). Domain-specific learning of grammatical structure in musical and phonological sequences. *Mem Cognit.*, 1, 10-20.

2008

- Rasch, B., Pommer, J., Diekelmann, S., & Born, J. (2008). Pharmacological REM sleep suppression paradoxically improves rather than impairs skill memory. *Nature Neuroscience*. 12(4). 396-397.
- Rasch, B. & Born, J. (2008). Reactivation and Consolidation of Memory During Sleep. *Current Directions in Psychological Science*, 17(3), 188-192.
- Gais, S., Rasch, B., Wagner, U., & Born, J. (2008). Visual-procedural memory consolidation during sleep blocked by glutamatergic receptor antagonists. *J Neurosci.*, 28, 5513-8.

2007

- Rasch, B., Büchel, C., Gais, S., & Born, J. (2007). Odor cues during slow-wave sleep prompt declarative memory consolidation. *Science*, 315, 1426-1429.
- Rasch, B., Dodt, C., Mölle, M., & Born, J. (2007). Sleep-stage-specific regulation of plasma catecholamine concentration. *Psychoneuroendocrinology*, 32(8-10), 884-891.
- Rasch, B. & Born, J. (2007). Maintaining Memories by Reactivation. *Current Opinion in Neurobiol.* 17(6), 698-703
- Perras, B., Berkemeier, E., Rasch, B., Fehm, H. L., & Born, J. (2007). PreproTRH((158-183)) fails to affect pituitary-adrenal response to CRH/vasopressin in man: A pilot study. *Neuropeptides*, 41, 233-238.

2006

- Born, J., Rasch, B., & Gais, S. (2006). Sleep to remember. *Neuroscientist*, 12, 410-424.
- Rasch, B., Born, J., & Gais, S. (2006). Combined blockade of cholinergic receptors shifts the brain from stimulus encoding to memory consolidation. *J.Cogn Neurosci.*, 18, 793-802.

- Krug, R., Born, J., & Rasch, B. (2006). A 3-day estrogen treatment improves prefrontal cortex-dependent cognitive function in postmenopausal women. *Psychoneuroendocrinology*, 31, 965-975.
- Wagner, U., Hallschmid, M., Rasch, B., & Born, J. (2006). Brief sleep after learning keeps emotional memories alive for years. *Biol Psychiatry*, 60, 788-790.
- Kozhevnikov, M., Motes, M. A., Rasch, B., Blajenkova, O. (2006). Perspective-Taking vs. Mental Rotation Transformations and How They Predict Spatial Navigation Performance. *Applied Cognitive Psychology*, 20(3), 397-417.

2002

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EDITORIALS / BOOKS / CHAPTERS

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