

CURRICULUM VITAE

Marieke Jepma

CONTACT INFORMATION

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RESEARCH INTERESTS

Topics: reinforcement learning, decision-making,
effects of prior beliefs on (pain-related) learning and pain perception,
role of neuromodulators in cognition, uncertainty and curiosity

Methods: behavioral and psychophysiological measures,
computational modeling of behavior, neuroimaging (fMRI, EEG),
pharmacology, patient studies

EDUCATION

2011 PhD in cognitive neuroscience, *cum laude*
Leiden University, Institute of Psychology, Cognitive Psychology Unit
Dissertation title: Arousal, exploration and the locus coeruleus-
norepinephrine system.

2006 MSc in cognitive neuroscience, University of York, UK, *with distinction*
Thesis title: The neural basis of number-induced attention shifts.

2005 MSc in psychology, University of Groningen, *cum laude*
Thesis title: Colors count for synesthetes: Evidence for bidirectionality
in color-graphemic synesthesia.

PROFESSIONAL APPOINTMENTS

2018-now Postdoctoral researcher, University of Amsterdam, the Netherlands

2015-2017 VENI research fellow, Leiden University, Institute of Psychology,
Cognitive Psychology Unit

2011-2014 Postdoctoral researcher, University of Colorado Boulder, USA
Department of Psychology and Neuroscience

PUBLICATIONS

Jepma, M., Brown, S.B., Murphy, P.R, Koelewijn, S.C., de Vries, B., van den Maagdenberg, A.M., Nieuwenhuis, S. (in revision). Noradrenergic and cholinergic modulation of belief updating.

Jepma, M., Koban, L., van Doorn, J., Jones, M., Wager, T.D. (in revision). Self-reinforcing expectancy effects on pain: Behavioral and brain mechanisms.

Koban, L., **Jepma, M.**, Geuter, S., Wager, T.D. (2017). What's in a word? How instructions, suggestions, and social information change pain and emotion. *Neuroscience & Biobehavioral Reviews*, 81(Pt A): 29-42.

Woo, C.W., Schmidt, L., Krishnan, A., **Jepma, M.**, Roy, M., Lindquist, M.A., Atlas, L.Y., Wager, T.D. (2017). Quantifying cerebral contributions to pain beyond nociception. *Nature Communications*, 8: 14211.

Bakic, J., Pourtois, G., **Jepma, M.**, Duprat, R., De Raedt, R., Baeken, C. (2017). Reinforcement learning in Major Depressive Disorder when self-efficacy is the rewarded component: spared internal but impaired external reward prediction error signals. *Depression and Anxiety*, 34(1): 89-96.

Lindquist, M.A., Krishnan, A., Lopez-Sola, M., **Jepma, M.**, Woo, C.W., Koban, L., Roy, M., Atlas, L.Y., Chang, L.J., Losin, L., Eisenbarth, H., Ashar, Y.K., Delk, Z., Wager, T.D. (2017). Group-regularized individual prediction: theory and application to pain. *Neuroimage*, 145(Pt B): 274-287.

Jepma, M., Murphy, P., Nassar, M.R., Rangel-Gomez, M., Meeter, M., Nieuwenhuis, S. (2016). Catecholaminergic regulation of learning rate in a dynamic environment. *PLoS Computational Biology*, 20(10): e1005171.

Bakic, J., De Raedt, R., **Jepma, M.**, Pourtois, G. (2015). What is in the feedback? Effect of induced happiness vs. sadness on probabilistic learning with vs. without exploration. *Frontiers in Human Neuroscience*, 9: 584.

Jepma, M., Wager, T.D. (2015). Conceptual conditioning: Mechanisms mediating conditioning effects on pain. *Psychological Science*, 26, 1728-39.

Roy, M., Shohamy, D., Daw, N., **Jepma, M.**, Wimmer, G.E., Wager, T.D. (2014). Representation of aversive prediction errors in the human periaqueductal gray. *Nature Neuroscience*, 17, 1607-12.

Bakic, J., **Jepma, M.**, De Raedt, R., Pourtois, G. (2014). Effects of positive mood on probabilistic learning: Behavioral and electrophysiological correlates. *Biological Psychology*, 103, 223-32.

Jepma, M., Jones, M., & Wager, T.D. (2014). The dynamics of pain: Evidence for simultaneous site-specific habituation and site-nonspecific sensitization in thermal pain. *The Journal of Pain*. 15, 734-46.

Jepma, M., & Lopéz-Solà, M. (2014). Anxiety and framing effects on decision making. Insights from neuroimaging. *Journal of Neuroscience*. 34, 3455-6

Jepma, M., & Wager, T.D. (2013). Multiple potential mechanisms for context effects on pain. *Pain*, 154, 629-31.

- Jepma, M., Verdonschot, R.G., Van Steenbergen, H., Rombouts, S.A., & Nieuwenhuis, S. (2012).** Neural mechanisms underlying the induction and relief of perceptual curiosity. *Frontiers in Behavioral Neuroscience*, 6: 5
- Jepma, M., Wagenmakers, E.-J., & Nieuwenhuis, S. (2012).** Temporal expectation and information processing: A model-based analysis. *Cognition*, 122, 426-41
- Nieuwenhuis, S., **Jepma, M.**, & Wagenmakers, E.-J. Temporal expectation may affect the onset, not the rate, of evidence accumulation [electronic response to Rohenkohl, Cravo, Wyart, & Nobre (2012). Temporal expectation improves the quality of sensory information. *Journal of Neuroscience*, 32, 8424-8428]
- Jepma, M., Deinum, J., Asplund, C.L., Rombouts, S.A., Tamsma, J.T., Tjeerdema, N., Spapé, M.M., Garland, E.M., Robertson, D., Lenders, J.W., & Nieuwenhuis, S. (2011).** Neurocognitive function in dopamine-beta-hydroxylase deficiency. *Neuropsychopharmacology*, 36, 1608-19
- Jepma, M., & Nieuwenhuis, S. (2011).** Pupil diameter predicts changes in the exploration-exploitation tradeoff: Evidence for the adaptive gain theory of locus coeruleus function. *Journal of Cognitive Neuroscience*, 23, 1587-96
- Jepma, M., te Beek, E.T., Wagenmakers, E.-J., van Gerven, J.M., & Nieuwenhuis, S. (2010).** The role of the noradrenergic system in the exploration-exploitation trade-off: A psychopharmacological study. *Frontiers in Human Neuroscience*, 4, 170.
- Gilzenrat, M.S., Nieuwenhuis S., **Jepma, M.**, & Cohen, J.D. (2010). Pupil diameter tracks changes in control state predicted by the adaptive gain theory of locus coeruleus function. *Cognitive, Affective, & Behavioral Neuroscience*, 10, 252-269.
- Nieuwenhuis, S., & **Jepma, M.** (2010). Investigating the role of the noradrenergic system in human cognition. In T. Robbins, M. Delgado, & E. Phelps (Eds.), *Decision making. Attention & Performance*, Vol. XXIII. Oxford: Oxford University Press.
- Jepma, M., Wagenmakers, E.-J., Band, G.P., & Nieuwenhuis, S. (2009).** The effects of accessory stimuli on information processing: Evidence from electrophysiology and a diffusion-model analysis. *Journal of Cognitive Neuroscience*, 21, 847-864.
- Nieuwenhuis, S., **Jepma, M.**, La Fors, S., & Olivers, C.N. (2008). The role of the magnocellular and parvocellular pathways in the attentional blink. *Brain and Cognition*, 68, 42-48.
- Johnson, A., **Jepma, M.**, & de Jong, R. (2007). Colours sometimes count: Awareness and bi-directionality in grapheme-colour synaesthesia. *Quarterly Journal of Experimental Psychology*, 60, 1406-1422.

GRANTS, FELLOWSHIPS, AWARDS

2014	NWO VENI grant	€250.000
2014	Fellowship to Summer Institute in Cognitive Neuroscience, Santa Barbara, USA	

2012	Intermountain Neuroimaging Consortium, Pilot Funding Award (with Dr. Marina López-Solà)	\$6,000
2008	1 st prize EPOS poster competition and 2 nd prize EPOS paper competition (EPOS: Graduate School of Experimental Psychology)	
2007	Graduate Student Award, Cognitive Neuroscience Society	\$500
2005	Talent bursary, Netherlands organization for international cooperation in higher education (Nuffic)	€13.000

CONFERENCE CONTRIBUTIONS AND INVITED TALKS (selection)

10/2017	Annual Meeting of the Society for Psychophysiological Research, Vienna, Austria, speaker —symposium: <i>New computational approaches to P300 research in humans.</i>
09/2017	University of Amsterdam, the Netherlands, invited talk
08/2017	International Conference for Cognitive Neuroscience, Amsterdam, the Netherlands, symposium organizer and speaker —symposium: <i>Dilemmas in the face of uncertainty: Computational approaches to adaptive behavior.</i>
10/2016	Biennial Conference of the International Pharmacology-EEG Society, Nijmegen, the Netherlands, speaker —symposium: <i>Pharmacology-ERP</i>
06/2016	Conference of the European Society for Cognitive and Affective Neuroscience, Porto, Portugal, symposium organizer and speaker —symposium: <i>How expectations and learning shape the experience of aversive stimuli: From behavior to brain mechanisms</i>
04/2016	Birkbeck, University of London, UK, invited talk
12/2015	NVP winter conference, Egmond aan Zee, the Netherlands, speaker
06/2015	Multidisciplinary Conference on Reinforcement Learning and Decision Making, Edmonton, Canada, speaker
06/2014	European Pain School, Siena, Italy, speaker
03/2014	Computational and Systems Neuroscience (COSYNE), Snow Bird, USA, speaker —workshop: <i>Information sampling in behavioral optimization</i>
10/2013	Multidisciplinary Conference on Reinforcement Learning and Decision Making, Princeton, USA, poster
01/2011	Donders Institute, Radboud University Nijmegen, the Netherlands, invited talk
06/2010	Workshop “Motivational & Cognitive Control”, Oxford, UK, poster

- 12/2009 NVP winter conference, Egmond aan Zee, the Netherlands, **speaker**
- 09/2009 Conference of the European Society for Cognitive Psychology, Krakow, Poland, **speaker**
- 06/2009 Endo-Neuro-Psycho meeting, Doorwerth, the Netherlands, **speaker**
- 05/2007 Annual meeting of the Cognitive Neuroscience Society, New York, USA, **speaker** (Graduate Students Present session)

TEACHING

- 2015-2017 Research master course *Reinforcement Learning and Decision Making: Computational and Neural Mechanisms*, Leiden University—development, coordination, lecturing
- 2015-2017 Bachelor course *Cognitive Neuroscience*, Leiden University—lecturing, supervision of work groups
- 2015-2017 Minor *Brain and Cognition*, Leiden University—lecturing
- 2015-2017 Thesis and internship supervision, Leiden University

REVIEWING

Journals: Biological Psychiatry, Biological Psychology, Cognitive Affective & Behavioral Neuroscience, Drug and Alcohol Dependence, Frontiers in Human Neuroscience, Human Brain Mapping, International Journal of Psychophysiology, Journal of Cognitive Neuroscience, Journal of Neuroscience, Journal of Vision, Neuropsychologia, Neuroscience & Biobehavioral Reviews, Pain, Pain Practice, PLoS Computational Biology, PLoS ONE, Psychological Bulletin, Psychological Research, Psychonomic Bulletin and Review, Psychophysiology

Funding agencies: National Science Foundation (USA), Netherlands Organization for Scientific Research, Research Foundation Flanders