

Publication list for Dominik R. Bach (July 2019)

(1) Research articles

forthcoming

Oberrauch S, Sigrist H, Sautter E, Gerster S, **Bach DR**, Pryce CR (2019). Establishing operant conflict tests for the translational study of anxiety in mice. Psychopharmacology, *in press*.

Tzovara T, Meyer SS, Bonaiuto JJ, Abivardi A, Dolan RJ, Barnes GR, **Bach DR** (2019). High-precision magnetoencephalography for reconstructing amygdalar and hippocampal oscillations during prediction of safety and threat. Human Brain Mapping, *in press*.

2019

Korn CW & **Bach DR** (2019). Minimizing threat via heuristic and optimal policies recruits hippocampus and medial prefrontal cortex. Nature Human Behavior, *3*(7):733-745.

Xia Y, Gurkina A & **Bach DR** (2019). Pavlovian-to-instrumental transfer after human threat conditioning. Learning & Memory, *26*(5):167-175.

2018

Tzovara A, Korn CW & **Bach DR** (2018). Human Pavlovian fear conditioning conforms to probabilistic learning. PLOS Computational Biology, *14*, e1006243.

Bach DR, Korn CW, Vunder J, Bantel A (2018). Effect of valproate and pregabalin on human anxiety-like behaviour in a randomised controlled trial. Translational Psychiatry, *8*, 157.

Bach DR, Tzovara A, Vunder J (2018). Blocking human fear memory with the matrix metalloproteinase inhibitor doxycycline. Molecular Psychiatry, *23*, 1584–1589.

Gerster S, Namer B, Elam M, **Bach DR** (2018). Testing a linear time invariant model for skin conductance responses by intraneural recording and stimulation. Psychophysiology, *55*, e12986.

Staib M & **Bach DR** (2018). Stimulus-invariant auditory cortex threat encoding during fear conditioning with simple and complex sounds. Neuroimage, *166*, 276-284.

Korn CW & **Bach DR** (2018). Heuristic and optimal policy computations in the human brain during sequential decision-making. Nature Communications, 9, 325.

2017

Homan P, Lin Q, Murrough JW, Soleimani L, **Bach DR**, Clem RL, Schiller D (2017). Prazosin during threat discrimination boosts memory of the safe stimulus. Learning & Memory, 24, 597-601.

Korn CW, Vunder J, Miro J, Fuentemilla L, Hurlemann R, **Bach DR** (2017). Amygdala lesions reduce anxiety-like behavior in a human benzodiazepine-sensitive approach-avoidance conflict test. Biological Psychiatry, 82, 522-531.

Khemka S, Barnes G, Dolan RJ, **Bach DR** (2017). Dissecting the function of hippocampal oscillations in a human anxiety model. Journal of Neuroscience, 37, 6869-6876.

Abivardi A & **Bach DR** (2017). Deconstructing white matter connectivity of human amygdala nuclei with thalamus and cortex subdivisions in vivo. Human Brain Mapping, 38, 3927-3940.

Bach DR, Symmonds M, Barnes G, Dolan RJ (2017). Whole-brain neural dynamics of probabilistic reward prediction. Journal of Neuroscience, 37, 3789-3798.

Korn CK, Staib M, Tzovara A, Castegnetti G, **Bach DR** (2017). A pupil size response model to assess fear learning. Psychophysiology, 54, 330-343.

Khemka S, Tzovara A, Gerster S, Quednow BB, **Bach DR** (2017). Modelling startle eye blink electromyogram to assess fear learning. Psychophysiology, 54, 202-214.

Castegnetti G, Tzovara A, Staib M, Gerster S, **Bach DR** (2017). Assessing fear learning via conditioned respiratory amplitude responses. Psychophysiology, 54, 215-223.

Bach DR (2017). The cognitive architecture of anxiety-like behavioural inhibition. Journal of Experimental Psychology: Human Perception and Performance, 43, 18-29.

2016

Bach DR, Gerster S, Tzovara A, Castegnetti G (2016). A linear model for event-related respiration responses. Journal of Neuroscience Methods, 270, 174-155.

Paulus PC, Castegnetti G, & **Bach DR** (2016). Modeling event-related heart period responses. Psychophysiology, 53, 837-846.

Castegnetti G, Tzovara A, Staib M, Paulus PC, Hofer N, & **Bach DR** (2016). Modeling fear-conditioned bradycardia in humans. Psychophysiology, 53, 930-939.

Korn CW & **Bach DR** (2016). A solid frame for the window on cognition: Modeling event-related pupil responses. Journal of Vision, 16, 28.

2015

Bach DR (2015). Anxiety-like behavioural inhibition is normative under environmental threat-reward correlations. PLOS Computational Biology, 11, e1004646.

Staib M, Castegnetti G, **Bach DR** (2015). Optimising a model-based approach to inferring fear learning from skin conductance responses. Journal of Neuroscience Methods, 255, 131-138.

Bach DR, Staib M (2015). A matching pursuit algorithm for inferring tonic sympathetic arousal from spontaneous skin conductance fluctuations. Psychophysiology, 52, 1106-12.

Bach DR, Furl N, Barnes G, Dolan RJ (2015). Sustained Magnetic Responses in Temporal Cortex Reflect Instantaneous Significance of Approaching and Receding Sounds. PLOS ONE, 10, e0134060.

Bach DR, Seifritz E, Dolan RJ (2015). Temporally unpredictable sounds exert a context-dependent influence on evaluation of unrelated images. PLOS ONE, 10, e0131065.

Korn CW & **Bach DR** (2015). Maintaining Homeostasis by Decision-Making. PLOS Computational Biology, 11, e1004301.

Bach DR (2015). A cost minimisation and Bayesian inference model predicts startle reflex modulation across species. Journal of Theoretical Biology, 370, 53-60.

Bach DR, Hurlemann R, Dolan RJ (2015). Impaired threat prioritisation after selective bilateral amygdala lesions. Cortex, 63, 206-213.

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Bach DR (2014). A head-to-head comparison of SCRalyze and Ledalab, two model-based methods for skin conductance analysis. Biological Psychology, 103, 63-68.

Bach DR, Schmidt-Daffy M, Dolan RJ (2014). Facial expression influences face identity recognition during the attentional blink. Emotion, 14, 1007-1013.

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Pooresmaeli A, FitzGerald THB, **Bach DR**, Toelch U, Ostendorf F, Dolan RJ (2014). Crossmodal effects of value on perceptual acuity and stimulus encoding. PNAS, 111, 15244-15429.

Bulganin L, **Bach DR**, Wittmann BC (2014). Prior fear conditioning and reward learning interact in fear and reward networks. Frontiers in Behavioral Neuroscience, 8, 67.

Bach DR, Guitart-Masip M, Packard PA, Miró J, Falip M, Fuentemilla L, Dolan RJ (2014). Human hippocampus arbitrates approach-avoidance conflict. Current Biology, 24, 541-547.

Pooresmaeli A, **Bach DR**, Dolan RJ (2014). The effect of visual salience on memory-based choices. Journal of Neurophysiology, 111, 481-487.

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Bach DR, Friston KJ, Dolan RJ (2013). An improved algorithm for model-based analysis of evoked skin conductance responses. Biological Psychology, 94, 490-497.

Bach DR, Hurlemann R, & Dolan RJ (2013). Unimpaired discrimination of fearful prosody after amygdala lesion. Neuropsychologia, 51, 2070-2074.

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Bauer M, Kluge C, **Bach D**, Bradbury D, Heinze HJ, Dolan RJ, & Driver J (2012). Cholinergic enhancement of visual attention and neural oscillations in the human brain. Current Biology, 22, 397-402.

Campbell-Meiklejohn DK, Kanai R, Bahrami B, **Bach DR**, Dolan RJ, Roepstorff A, & Frith CD (2012). Structure of orbitofrontal cortex predicts social influence. Current Biology, 22, R123-R124.

Chumbley JR, Flandin G, **Bach DR**, Daunizeau J, Fehr E, Dolan RJ, & Friston KJ (2012). Learning and Generalization under Ambiguity: An fMRI Study. PLOS Computational Biology, 8 (1), e1002346.

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Klein-Flügge MC, Hunt LT, **Bach DR**, Dolan RJ, & Behrens TEJ (2011). Dissociable Reward and Timing Signals in Human Midbrain and Ventral Striatum. Neuron, 72, 654-664.

Symmonds M, Wright ND, **Bach DR**, & Dolan RJ (2011). Deconstructing risk: Separable encoding of variance and skewness in the brain. Neuroimage, 58, 1139-1149.

Bach DR, Weiskopf N, & Dolan RJ (2011). A stable sparse fear memory trace in human amygdala. Journal of Neuroscience, 31, 9383-9389.

Guitart-Masip M, Fuentemilla L, **Bach DR**, Huys QJM, Dayan P, Dolan RJ, & Duzel E (2011). Action dominates valence in anticipatory representations in the human striatum and dopaminergic midbrain. Journal of Neuroscience, 31, 7867-7875.

Bach DR, Talmi D, Hurlmann R, Patin A, & Dolan RJ (2011). Automatic relevance detection in the absence of a functional amygdala. Neuropsychologia, 49, 1302-1305.

Nicolle A, **Bach DR**, Driver J, & Dolan RJ (2011). A Role for the Striatum in Regret-related Choice Repetition. Journal of Cognitive Neuroscience, 23, 845-56.

Bach DR, Hulme O, Penny W, & Dolan RJ (2011). The known unknowns: Neural representation of second-order uncertainty, and ambiguity. Journal of Neuroscience, 31, 4811-4820.

Nicolle A, Fleming SM, **Bach DR**, Driver J, & Dolan RJ (2011). A Regret-Induced Status Quo Bias. Journal of Neuroscience, 31, 3320-3327.

Bach DR, Buxtorf K, Strik WK, Neuhoff JG, & Seifritz E (2011). Evidence for impaired sound intensity processing in schizophrenia. Schizophrenia Bulletin, 37, 426-431.

Bach DR, Daunizeau J, Kuelzow N, Friston KJ, & Dolan RJ (2011). Dynamic causal modelling of spontaneous fluctuations in skin conductance. Psychophysiology, 48, 252-57.

Bach DR, Behrens TE, Garrido L, Weiskopf N, Dolan RJ (2011). Deep and superficial amygdala nuclei projections revealed in vivo by probabilistic tractography. Journal of Neuroscience, 31, 618-23.

Nicolle A, **Bach DR**, Frith C, & Dolan RJ (2011). Amygdala involvement in self-blame regret. Social Neuroscience, 6, 178-89.

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Fitzgerald TH, Seymour B, **Bach DR**, & Dolan RJ (2010). Differentiable Neural Substrates for Learned and Described Value and Risk. Current Biology, *20*, 1823-29.

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Bach DR, Friston KJ, & Dolan RJ (2010). Analytic measures for quantification of arousal from spontaneous skin conductance fluctuations. International Journal of Psychophysiology, *76*, 52-55.

Bach DR, Flandin G, Friston KJ, & Dolan RJ (2010). Modelling event-related skin conductance responses. International Journal of Psychophysiology, *75*, 349-356.

Bach DR, Kindler J, & Strik WK (2010). Elevated bilirubin in acute and transient psychotic disorder. Pharmacopsychiatry, *43*, 12-16.

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Bach DR, Flandin G, Friston KJ, & Dolan RJ (2009). Time-series analysis for rapid event-related skin conductance responses. Journal of Neuroscience Methods, *184*, 224-234.

Bach DR, Neuhoff JG, Perrig W, & Seifritz E (2009). Looming sounds as warning signals: the function of motion cues. International Journal of Psychophysiology, *74*, 28-33.

Bach DR, Buxtorf K, Grandjean D, & Strik WK (2009). The influence of emotion clarity on emotional prosody identification in paranoid schizophrenia. Psychological Medicine, *39*, 927-938.

Bach DR, Herdener M, Grandjean D, Sander D, Seifritz E, & Strik WK (2009). Altered lateralisation of emotional prosody processing in schizophrenia. Schizophrenia Research, *110*, 180-187.

Herdener M, Lehmann C, Esposito F, Di Salle F, Federspiel A, **Bach DR**, Scheffler K, & Seifritz E (2009). Brain responses to auditory and visual stimulus offset: Shared representations of temporal edges. Human Brain Mapping, *30*, 725-733.

Bach DR, Seymour B, & Dolan RJ (2009). Neural activity associated with the passive prediction of ambiguity and risk for aversive events. Journal of Neuroscience, *29*, 1648-1656.

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Bach DR, Grandjean D, Sander D, Herdener M, Strik WK, & Seifritz E (2008). The effect of appraisal level on processing of anger and fear prosody in meaningless speech. Neuroimage, *42*, 919-927.

Bach DR, Schächinger H, Neuhoff JG, Esposito F, DiSalle F, Lehmann C, Herdener M, Scheffler K, & Seifritz E (2008). Rising sound intensity: An intrinsic warning cue activating the amygdala. Cerebral Cortex, *18*, 145-150.

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Bach DR & Erdmann G (2007). Influences of habitual and situational bodily symptom focusing on stress responses. Cognition and Emotion, *21*, 1091-1101.

Herry C*, **Bach DR***, Esposito F, Di Salle F, Perrig WJ, Scheffler K, Luthi A, & Seifritz E (2007). Processing of temporal unpredictability in human and animal amygdala. Journal of Neuroscience, *27*, 5958-5966. * equal contribution

Herdener M, Esposito F, Di Salle F, Lehmann C, **Bach DR**, Scheffler K, & Seifritz E (2007). BOLD correlates of edge detection in human auditory cortex. Neuroimage, *36*, 194-201.

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2006

Bach DR, Erdmann G, Schmidtman M, & Monnikes H (2006). Emotional stress reactivity in irritable bowel syndrome. European Journal of Gastroenterology and Hepatology, *18*, 629-636.

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Andresen V, **Bach DR**, Poellinger A, Tsrouya C, Stroh A, Foerschler A, Georgiewa P, Zimmer C, & Monnikes H (2005). Brain activation responses to subliminal or supraliminal rectal stimuli and to auditory stimuli in irritable bowel syndrome. Neurogastroenterology and Motility, *17*, 827-837.

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Osmanoglou E, van der Voort I, Fach K, Kosch O, **Bach D**, Hartmann V, Strenzke A, Weitschies W, Wiedenmann B, Trahms L, & Mönnikes H (2004). Oesophageal transport of solid dosage forms depends on body position, swallowing volume and pharyngeal propulsion velocity. Neurogastroenterology and Motility, *16*, 547-556.

(2) Review papers

Bach DR, Brown SA, Kleim B, Tyagarajan SK (2019). Extracellular matrix: a new player in memory maintenance and psychiatric disorder. Swiss Medical Weekly, *149*, w20060.

Bach DR, Castegnetti G, Korn CW, Gerster S, Melinscak F, Moser T (2018). Psychophysiological modelling - current state and future directions. Psychophysiology, *55*, e13209.

Bach DR, & Dayan, P (2017). Algorithms for survival: a comparative perspective on emotions. Nature Reviews Neuroscience, *18*, 311-319.

Bach DR, & Friston KJ (2013). Model-based analysis of skin conductance responses: Towards causal models in psychophysiology. Psychophysiology, *50*, 15-22

Bach DR, & Dolan RJ (2012). Knowing how much you don't know: a neural organization of uncertainty estimates. Nature Reviews Neuroscience, *13*, 572-586.

Freund P, Friston K, Thompson AJ, Stephan KE, Ashburner J, **Bach DR**, Nagy Z, Helms G, Draganski B, Mohammadi S, Schwab ME, Curt A, Weiskopf N. (2016). Embodied neurology: an integrative framework for neurological disorders. Brain, 139, 1855-1861.

Stephan KE, **Bach DR**, Fletcher PC, Flint J, Frank MJ, Friston KJ, Heinz A, Huys QJ, Owen MJ, Binder EB, Dayan P, Johnstone EC, Meyer-Lindenberg A, Montague PR, Schnyder U, Wang XJ, Breakspear M (2016). Charting the landscape of priority problems in psychiatry, part 1: classification and diagnosis. Lancet Psychiatry, 3, 77-83.

Stephan KE, Binder EB, Breakspear M, Dayan P, Johnstone E, Meyer-Lindenberg A, Schnyder U, Wang XJ, **Bach DR**, Fletcher PC, Flint J, Frank MJ, Heinz A, Huys QJM, Montague PR, Owen JM, Friston KJ (2016). Charting the landscape of priority problems in psychiatry, part 2: pathogenesis and aetiology. Lancet Psychiatry, 3, 84-90.

(3) Peer-reviewed case reports

Bach DR, Moggi F, Muller TJ, Seifritz E, Strik WK, & Wirtz G (2007). Possible genetic link between Darier's disease and depression : Review of the literature and case history. [Article in German.] Nervenarzt, 78, 81-84.

Bach DR & Seifritz E (2005). "Simple dissociative disorder" in Central Europe: a case report. European Psychiatry, 20, 572-573.

(4) Peer-reviewed commentaries

Bach DR (2014). Sympathetic nerve activity can be estimated from skin conductance responses - a comment on Henderson et al. (2012). Neuroimage, 84, 122-123.

Bach DR & Friston KJ (2012). No evidence for a negative prediction error signal in peripheral indicators of sympathetic arousal. Neuroimage, 16, 883-884.

(5) Book chapters

Bach DR (2017). Decision making under uncertainty. In: Reuter M & Montag C (Eds.). Neuroeconomics. Berlin: Springer. [ISBN 978-3-642-35922-4]

Bach DR (2017). Skin conductance measures in neuroeconomic research. In: Reuter M & Montag C (Eds.). Neuroeconomics. Berlin: Springer. [ISBN 978-3-642-35922-4]

Bach DR, Pryce CR, & Seifritz E (2011). The experimental manipulation of uncertainty. In: Raber J (Ed.). Animal models of behavioural analysis. New York: Springer. [ISBN 978-1-60761-883-6]

Bach DR & Erdmann G (2008). Subjective bodily symptoms during anticipation of public speaking: Influence of habitual symptom perception and actual symptom focusing. [Article in German]. In: Janke W, Schmidt-Daffy M, & Debus G (Eds.). Experimentelle Emotionspsychologie. Lengerich: Pabst. [ISBN 978-3-89967-450-7]

(6) Books

Bach DR (2009). Emotionale Effekte einer indirekten Amygdalastimulation beim Menschen. Berlin: dissertation.de