**Matthew Apps, PhD.**

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*My research examines the neurobiological mechanisms underlying motivation and reward processing. How does our brain decide what is worth doing and how do we understand similar decisions made by other people? I use a combination of techniques including fMRI, diffusion-weighted imaging, computational modelling, pharmacology and brain stimulation to examine how the brain evaluates the costs and benefits of behaviours. I use these approaches to understand variability in motivation and social abilities in healthy individuals as well as in neurological (e.g. Parkinson’s disease) and psychiatric conditions (e.g Autism Spectrum Disorders).*

**Education and Employment History**

*2015-2018:* **BBSRC Anniversary Future Leader Fellow (Principal Investigator, Oxford)**

Topic: *A Biological Framework for Understanding and Modulating Apathy in Healthy People*

*2014-2016:* **Somerville College Fulford Junior Research Fellow**

*2013-2015:*  **Postdoctoral Research Associate (University of Oxford)**

*with Prof. Masud Husain* Topic: *Apathy, motivation and effort-based decision-making*

*2011-2013:*  **Postdoctoral Research Fellow (Royal Holloway, Uni. Of London [RHUL])**

*with Prof. Manos Tsakiris* Topic: *Computational modelling of self-other distinction*

*2008-2011:*  **PhD. in Cognitive Neuroscience (ESRC scholarship; RHUL)**

*with Prof. Narender Ramnani* Topic: *Value processing during social interactions*

*2007-2008:* **MSc. Research Methods in Psychology (ESRC funded, Reading University)**

*Grade: Distinction (1st in cohort)*

*2004-2007:*  **BSc. Psychology** (RHUL)

*Grade: 1st Class Honours (3rd in cohort)*

**Grants**

***Research Grants:***

* BBSRC AFL Fellowship (Principal Investigator) ~£295,000
* ESRC 1+3 open competition MSc. and PhD Studentship (2007-2011) ~£70,000

***Travel Grants/Prizes:***

* Society for Neuroscience Professional Development Award (2016) - $2000
* Organization for Human Brain Mapping trainee award (2009, 2015) - $2700
* Guarantors of Brain travel grant (2009, 2011, 2013) - £2400
* BPS postdoctoral travel award (2014) - £350
* EPS Grindlay grant (2013) - £500

**Awards**

* European Society for Cognitive and Affective Neuroscience ***Young Scientist Award*** (2016)
* Society for Neuroscience ***Professional Development Award*** (2016)
* Fulford Junior Research Fellowship at Somerville College, Oxford (2014-2016)
* OHBM trainee award (2009, 2015)
* Jack Westaway prize for best undergraduate project (2007)

**Selected Responsibilities**

* Early Career Committee Departmental board representative (2017-)
* Organiser of Neuroscience Seminar Series (2015-)
* Organiser of Motivation and Decision-Making workshop (2015)
* Interviewing of undergads, RAs and postdoc for positions in the cognitive neurology group
* Attended training for Leadership (BBSRC), Research Management (Oxford), and interviewing/hiring (Oxford)
* ***Grant reviewing:*** *BBSRC, National Science Foundation (US), Czech National Science Foundation*
* ***Journal reviewing:*** *Current Biology, Journal of Neuroscience, PLoS Biology, Cerebral Cortex, Neuroscience and Biobehavioural Reviews, Neuroimage, Cortex, Frontiers, Journal of Experimental Psych., SCAN, Scientific Reports*

**Selected Invited Oral Presentations**

* London Judgement and Decision-Making seminar series (2016)
* Control Processes Conference, San Diego (2016)
* Oxford autumn school in cognitive neuroscience seminar (2016)
* ESCAN 2016 meeting, Porto, Young Scientist Award Lecture (2016)
* Social and Affective Neuroscience Society symposium talk (2016)
* Neuroscience department, ETH Zurich (2015)
* Neuroimaging group, IOPPN, King’s College London (2015)
* Experimental Psychology department seminar, Ghent University (2015)
* Developmental Risk and Resilience Unit, UCL (2015)
* Psychology Departmental seminar, Roehampton University (2014)
* Decision-making and action group, Experimental Psychology, University of Oxford (2013)
* Experimental Psychology Society meeting, London (2013)
* Institute of Neuroscience seminar, Trinity College, Dublin (2012)
* Symposia talk, Annual meeting of the Organization for Human Brain Mapping (2009)

**Supervision**

* Psychology, Biomedical sciences and Medical undergraduate student projects (>10 between 2009-2017)

**PhD students**:

* Tanja Mueller (1st year DPhil candidate - *main supervisor,* Oxford)
* Dr. Campbell Le Heron (3rd year Dphil, *Co-supervisor,* Oxford)
* Luis Sebastian Contreras-Huerta (1st year DPhil candidate – *Co*-*supervisor,* Oxford)

**MSc students:**

* > 6 MSc students solo or co-supervision
* Dr. Robin Green (MSc student at RHUL. Now a fellow at University of Leicester)
* Dr. Vivien Ainley (MSc student at RHUL. Now a postdoc at Royal Holloway)
* Dr. Erman Misirlisoy, (MSc Student at RHUL; PhD awarded from UCL; now Lead Scientist at Peak)
* Laura Grima (MSc student at Oxford, now a PhD student at University of Oxford)

**Teaching**

***Lecturing*:**

* Teaching and learning training courses, Oxford (2016)
* ‘Dopamine Reward and Reinforcement’, Royal Holloway, Psychology BSc 2nd year. (2011-2014)
* ‘The Primate Brain: Structural Anatomy’, Lecture, Human Neuroscience MSc. (2010)
* ‘The Social Brain’, Lecture, Human Neuroscience MSc. (2010)
* ‘Social Neuroscience Techniques’, Lecture, Applied Social Psychology MSc. (2010)

***Small group teaching*:**

* Memory, attention and information processing 2nd year tutorials (St Anne’s, Oxford; 2016)
* MSc./BSc. Neuroanatomy practical (3rd year BSc., post-mortem tissue demonstration; 2009-2012)
* ‘How to use Linux and MATLAB’ tutorial (2010)
* ‘Preprocessing and General Linear Model Analysis in SPM’ tutorial, 3rd year (2010)
* ‘Dynamic Causal Modelling for fMRI: Theory and Practice’ tutorial, 3rd year (2010)
* Statistics Tuition, 2nd Year Undergraduate statistical theory and SPSS training (2007-2008)

***Marking*:**

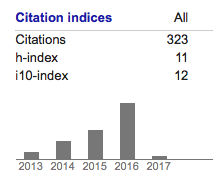
* Essay marking (1st, 2nd and 3rd years undergraduate, MSc in Psychology, MSc in Neuroscience) at Royal Holloway and Oxford.
* Project marking (BSc Psychology, Medicine, and Biomedical Sciences; MSc in Psychology).

**Selected Media/Public engagement**

* Organisation and attendance at CNC outreach event for patients, carers and healthy volunteers (2017)
* *NatureJobs event.* Panel discussion on success in academia (2016)
* UNIQ A’ level school visit hosting (2016)
* Professional twitter account (>1900 followers incl. scientists and general public)
* Invited blog on the conversation website: <https://theconversation.com/what-goes-on-in-teachers-brains-as-they-help-students-to-learn-37672>
* Guardian Research of the Week: <http://www.theguardian.com/teacher-network/2015/feb/20/scientists-teachers-brains-work-weekly-news-review>
* Study reported on BBC news: <http://www.bbc.co.uk/news/education-31503265>
* Study reported in the Times newspaper and the Times online: http://www.thetimes.co.uk/tto/science/article3921675.ece
* Report in Men’s Health US: <http://www.menshealth.com/best-life/remember-faces>
* Comment in Nature news section: doi:10.1038/nature.2012.1211
* Studies also reported in: La Scienza, O Globo, Le Figaro, Psypost, ScienceDaily, HealthCanal
* Public demonstrator at British Neuroscience Society Festival of Neuroscience

**Publications**

**Under Review**

****Apps, M.A.J**.\*\*, Chong, T-J. T.\*\*, Sillence, A., Giehl, K., Grima, L., & Husain, M. (3rd revision - *PloS Biology*). Neural mechanisms of subjective motivation of effort costs. ***\**** *equal contributors*

**Apps, M.A.J**., & Ramnani, N. (revised, *Cerebral Cortex*). Medial prefrontal contributions to subjective and normative economic decision-making.

**Apps, M.A.J**.,\* Mckay, R.,\* Azvedo, R., Tsakiris, M.,\* & Whitehouse, H.,\* (under review). Medial prefrontal cortex contributions to ingroup unfairness. ***\* equal contributors***

**2017**

**Apps, M.A.J**.\*\*, Chong, T-J. T.\*\*, Sillence, A., Giehl, K., Grima, L., & Husain, M. (in press). Neural mechanisms of subjective motivation of effort costs. *Plos Biology*. ***IF = 9.3\**** *equal contributors*

**Apps, M.A.J**, & Sallet, J. (in press). Social Learning in Medial Prefrontal Cortex. *Trends in Cognitive Sciences.* ***IF = 17.9.***

Balsters, J.H., **Apps, M.A.J.,** Bolis, D., Lehner, R., Gallagher, l., & Wenderoth, N. (2017). Social prediction error deficits in the autism spectrum. *Brain.* ***IF = 10.1;*** *Altmetric: 27 – top 4% of all papers of all time.*

Ang., Y., Lockwood, P.L., Muhammed, K., **Apps, M.A.J.,** Husain, M., (2017). Distinct subtypes of apathy revealed by the apathy-motivation index. *PLOS one.* ***IF = 3.2;*** *Altmetric: 18 – top 6% of all papers of all time.*

**2016**

**Apps, M.A.J**, Rushworth, M.F.S., Chang, S.W.C. (2016). The anterior cingulate gyrus and social cognition: tracking the motivation of others. *Neuron.* ***IF = 15.77;*** *Altmetric: 83 – top 2%.*

Lockwood, P.L., **Apps M.A.J.**, Valton, V., Roiser, J., & Viding, E. (2016). Neurocomputational mechanisms of prosocial learning. *Proceedings of the National Academy of Sciences.* ***IF = 9.42;*** *Altmetric: 386 – top 1%*

Ainley, V., **Apps, M.A.J.,** Fotopolou, A., & Tsakiris, M. (2016) ‘Bodily Precision’: A Predictive Coding Account of Individual Differences in the Interoceptive Accuracy. *Philosophical Transactions of the* *Royal Society Biological Sciences B.* ***IF = 7.33;*** *Altmetric: 305 – top 12%*

Farmer, H., **Apps, M.A.J.,** & Tsakiris, M. (2016). Reputation in an Economic Game Modulates Premotor Cortex Activity during Action Observation. *European Journal of Neuroscience.* ***IF = 3.75***

Balsters, J.H., Mantini, D., **Apps, M.A**., Eickhoff, S., Wenderoth, N. (2016). Connectivity-based parcellation increases network detection sensitivity in resting state fMRI: An investigation into the cingulate cortex in autism. *Neuroimage: Clinical.* ***IF = 2.5;*** *Altmetric: 16 – top 10% of all papers.*

**2015**

**Apps, M.A.J.,** Lesage, E., & Ramnani, N. (2015) Vicarious Reinforcement Learning Signals When Instructing Others. *Journal of Neuroscience.* ***IF = 6.3;*** *Altmetric: 58 – top 2% of all papers.*

**Apps, M.A.J**., Grima, L., Manohar, S., & Husain, M. (2015). The role of cognitive effort in subjective reward devaluation and risky decision-making. *Scientific Reports****. IF = 5.6.*** *Altmetric: 30 – top 3% of all papers.*

Manohar, S., Chong, T., **Apps M.A.J**., Batla A., Stamelou M., Jarman PR., Bhatia KP., & Husain, M. (2015). Reward Pays the Cost of Noise Reduction in Motor and Cognitive Control. *Current Biology.* ***IF = 9.6****;**Altmetric: 35 – top 3% of all papers.*

Lockwood, P.L., **Apps M.A.J.**, Roiser, J., & Viding, E. (2015) Encoding of vicarious reward prediction in anterior cingulate cortex and relationship with trait empathy. *Journal of Neuroscience.* ***IF = 6.3.*** *Altmetric: 141 – top 1% of all papers.*

Ang, Y-S., Manohar, S. & **Apps, M.A.J.** (2015). Commentary: Noradrenaline and Dopamine Neurons in the Reward/Effort Trade-off: A Direct Electrophysiological Comparison in Behaving Monkeys. *Frontiers in Behavioural Neuroscience.* ***IF = 3.3****. Altmetric: 13 – top 8% of all papers.*

**2014**

**Apps M.A.J.,** & Ramnani, N. (2014). The anterior cingulate gyrus signals the net-value of others’ rewards. *Journal of Neuroscience.* ***IF = 6.3****;**Altmetric: 29 – top 4% of all papers.*

**Apps, M.A.J**. & Tsakiris, M (2014). The free-energy self: A predictive coding account of self-recognition. *Neuroscience and Biobehavioural Reviews.* ***IF = 9.4****;**Altmetric: 6 – top 16%.*

**2013**

**Apps, M.A.J.** & Tsakiris, M. (2013).Predictive codes of familiarity and context during the perceptual learning of facial identities. *Nature Communications, 4.* ***IF = 11.5****;**Altmetric: 51 – top 2%.*

**Apps, M. A. J**. , Tajadura-Jiménez, A. , Sereno, M., Blanke, O., & Tsakiris, M. (2013). Plasticity in unimodal and multimodal brain areas reflects multisensory changes in self-face identification. *Cerebral Cortex* ***IF = 8.7****;**Altmetric: 11 – top 8% of all papers.*

**Apps M.A.J.**, Lockwood, P.L. & Balsters, J.H. (2013). The role of the midcingulate cortex in monitoring others' decisions. *Frontiers in Neurosci*ence*. IF = 3.7;**Altmetric: 40 – top 3% of all papers.*

**Apps, M.A.J**., Green, R., & Ramnani, N. (2013). Reinforcement learning signals in the anterior cingulate cortex code for others’ false beliefs. *Neuroimage.* ***IF = 6.3****;**Altmetric: 6 – top 15%*

**2012**

**Apps, M.A.J.**, Tajadura-Jimenez, A., Turley, G,. & Tsakiris, M. (2012). The different faces of one’s self: an fMRI study into the recognition of current and past self-facial appearances. *Neuroimage.* ***IF = 6.3****;**Altmetric: 2 – top 50% of all papers.*

**Apps, M.A.J**., Balsters, J. H., & Ramnani, N. (2012). The Anterior Cingulate Cortex: Monitoring the outcomes of others’ decisions. *Social Neuroscience.* ***IF = 2.7****;**Altmetric: 7 – top 15%*

**2010**

Lesage E., **Apps, M. A. J**., Hayter, A. L., Beckmann, C. F., Barnes, D., Langdon, D. W., & Ramnani, N. (2010). Cerebellar Information Processing In Relapsing-Remitting Multiple Sclerosis (RRMS). *Behavioural Neurology*.***IF = 1.5.***

**In preparation**

Lockwood, P.L., Hamonet, M., Ratnavel, A., Salmony, F., Husain, M\*., **Apps, M.A.J.**\*(in prep). Prosocial Motivation: Hypo-altruism for exerting effort. ***\* equal contributors***

LeHeron, C., **Apps, M.A.J.,** & Husain, M. (in prep). Neural Mechanisms of Apathy across pathology.