Matthew Apps
Professor of Cognitive Computational Neuroscience, Centre for Human Brain Health & Institute for Mental Health (IMH), School of Psychology, University of Birmingham
Head of Motivation and Social Neuroscience Lab, www.MSN-lab.com

Education Summary

2008-2011: **PhD. in Cognitive neuroscience** (w/ Prof. Narender Ramnani, ESRC 1+3 scholarship; RHUL)
2007-2008: **MSc. Psychology Research Methods** (Reading University) *Grade: Distinction (1st in cohort)*
2004-2007: **BSc. Psychology** (Royal Holloway) *Grade: 1st Class Honours (3rd in cohort)*

Career to Date

2024-present: **Professor of Cognitive Computational Neuroscience** (University of Birmingham)
2020-2024: **Senior Research Fellow (=Associate Professor)** (University of Birmingham)
2018-2023: **Senior Associate Research Fellow,** Christ Church College, Uni. of Oxford
2018-2024: **BBSRC David Phillips Fellow** (Uni of Oxford [2018-2020] / Birmingham)
2015-2018: **BBSRC Anniversary Future Leader Postdoctoral Fellow** (PI, Uni. of Oxford)
2014-2016: **Fulford Junior Research Fellow** (Somerville College, Oxford)
2013-2015: **Postdoctoral Research Associate** (University of Oxford)
2011-2013: **Postdoctoral Research Fellow** (Uni. Of London [RHUL])
2009-2014: **Visiting Lecturer** (RHUL)

Grants

Major Grants (total approximately £4.8m [$5.9M] as PI/major Co-I)

2024-2029: **European Research Council Consolidator** *Principal Investigator* **£1,692,000**
A neurocomputational framework for the effort paradox (<10% success rate)

2023- 2025 **BBSRC Pioneer Award** *Principal Investigator* **≈£200,000**
The spinal signals underlying human motivation

2023-2030: **Wellcome Trust Discovery Award** *Co-Investigator* ≈£5,200,000 (To MA **≈£1,100,000)**
Human brain mechanisms of motivation and apathy (PI Prof. Masud Husain [Oxford])

2023-2025: **Jacobs Foundation Research Fellowship** *Principal Investigator* **≈£135,000**
Developing motivation for deadlines in young people

2023-2025: **BBSRC CCN special call** *Co-Principal Investigator* ≈£200,000 (To MA: ≈**£30,000)**
A computational framework for foraging (PI Prof. Mark Humphries [Nottingham])

2018-2024: **BBSRC David Phillips Fellowship** *Principal Investigator* **£1,244,000**
A biological framework for physical and social activity (<3% success rate)

2019-2020: **John Fell Fund** *Principal Investigator* **≈£42,000**
Neural mechanisms of foraging decisions

Grants(continued)

2015-2018:	**BBSRC Anniversary Future Leader Postdoc Fellowship** *Principal Investigator* A biological framework for apathy (<10% success rate)	**≈£295,000**
2007-2011	**ESRC 1+3 national competition MSc. and PhD Studentship** Contributions of the cingulate cortex to social motivation	**≈£70,000**

Co-Investigator / Collaborations

2024-2026	**AMS Springboard Award** *Collaborator (PI: Dr. Romy Froemer)*	**≈£125,000**
2023	**MRC Equipment Award** *Co-I (PI: Prof. Joe Galea)*	**≈£310,000**
2022-2025	**MRC New Investigator Award** *Co-I (PI: Prof. Saloni Krishnan)* ≈£700,000 (To MA*:* **≈£5,000)**	
2023-2025	**Willem Fonden Foundation grant (with Eriksholm)** *Consultant*	**£600,000**
2022-2025	**AMS Springboard Award** *Collaborator (PI: Prof. Saloni Krishnan)*	**≈£100,000**
2022:	**Christ Church Research Centre** *Principal Investigator*	**≈£6,000**
2020-2021:	**Wellcome Trust Institutional Strategic Support Fund** *Principal Investigator*	**≈£20,000**
2019-2020:	**Christ Church Research Centre** *Principal Investigator*	**≈£6,000**
2017-2018:	**Wellcome Trust Institutional Strategic Support Fund** *Principal Investigator*	**≈£26,000**
2020:	**ESRC Impact acceleration grant** *Co-investigator*	**≈£15,000**
2019:	**UK-Israel Synergy grant** *Co-applicant.*	**≈£7,000**

Grants as supervisor

2024-2027	**ESRC Midlands DTP PhD studentship** *Supervisor*	**≈£150,000**
2023-2026	**JSPS Japanese Postdoc Fellowship** *Supervisor*	**≈£150,000**
2022-2025	**Wellcome Trust DTP PhD studentship** *Supervisor*	**≈£200,000**
2021-2024:	**MRC IMPACT DTP PhD studentship** *Supervisor*	**≈£100,000**
2020-2024:	**BBSRC MIBTP PhD studentship** *Supervisor*	**≈£100,000**
2018-2019:	**ESRC Postdoctoral Fellowship** *Supervisor*	**≈£90,000**
2018-2019:	**Studienstiftung graduate scholarship** *Supervisor*	**≈£15,000**
2018-2019:	**British Federation of women graduates** *Supervisor*	**≈£6,000**

Awards

Personal awards

- British Association for Cognitive Neuroscience **Early Career Prize** (2021) – one national award annually
- University of Oxford **Recognition of Excellence** (2019)
- Society for Social Neuroscience (S4SN) Early Career Award (2018) – two awarded internationally annually
- European Society for Cognitive and Affective Neuroscience (ESCAN) Young Scientist Award (2016) – One award every two years across Europe.
- Society for Neuroscience **Professional Development Award** (2016)
- Organization for human brain mapping **Trainee Award** (2009 & 2015) – 20 awarded annually for the best submitted abstracts
- Royal Holloway Jack Westaway prize for **best undergraduate project** (2007)

Awards (continued)

Prestigious appointments

- Elected as a **Fellow to the young academy of Europe** (2021) - https://yacadeuro.org/apps/
- **Senior Associate Research Fellow** Christ Church, Oxford (2018-2023)
- **University Research honorary Lecturer title**, University of Oxford (2017)
- Competitive **Fulford Junior Research Fellowship** Somerville College (2014-2016)

Team Awards

- Best paper award from the Society for Neuroecomonics 2022 for Muller…Apps (2021) *Nature communications*
- SANS Innovation Award for best paper 2022, for Lockwood, Apps* and Chang*, (2021) *TICS*
- SANS Innovation Award for best paper 2017, for Lockwood, Apps et al (2016) *PNAS*

Selected Oral Presentations

- Invited talk: Society for Motivation, Washington (2025)
- Selected talk: Society for Social Neuroscience, Japan (2024)
- Invited talk: Mechanisms of Foraging, Janelia, US (2024)
- Invited talk: Motivation and Cognitive Control, Lyon (2023)
- Invited Departmental Seminar: Adrian Seminar series, University of Cambridge (2023)
- Invited talk: SBDM, Paris (2023)
- Invited talk Department seminar: University of Birkbeck (2023)
- Invited talk Department seminar: University of Nottingham (2023)
- Invited talk: Future of Foraging Seminar, virtual (2023)
- **Keynote:** British Association for Cognitive Neuroscience, Birmingham (2022)
- Selected Symposium: ESCAN virtual conference (2021)
- Selected symposia: Virtual FENS, Symposia chair and speaker (2020)
- Invited talk: Neuroeconomics, Dublin (2019)
- Selected symposia: ESCOP, Spain (2019)
- Selected Symposium: ISRE, Amsterdam (2019)
- **Invited Keynote**: 'Brain Camp', Kavli institute summer school in cog. neuroscience, US (2019)
- Invited Dept. Seminar: Birmingham University (2019)
- Invited talk: Society of the Biology of Decision-making (2019)
- Invited departmental talk: Affective brain, UCL (2019)
- Invited departmental talk: University of Zurich (2019)
- Invited departmental talk: University of Kent Psychology Department (2019)
- Invited departmental talk: Pompeu University, Barcelona (2019)
- Invited departmental talk: Dept. of Psychology, Royal Holloway (2019)
- Invited Symposium: Trends in decision-making, Paris, (2018)
- **Keynote + Symposium**: S4SN annual conference (2018)
- **Invited Keynote + workshop**: Aegina Social Cognition, Greece (2018)
- Invited Dept. Seminar: UCL Computational Psychiatry (2018)
- Selected Symposium American Psychological Society meeting, San Francisco (2018)
- Sympoisa (x2): ESCAN, Netherlands (2018)
- Symposium: Experimental Psychology Society meeting, Leicester (2018)
- Dept. Seminar: Psychology, Gent University (2018)
- Dept. Seminar: Donders Centre, Radbound University (2018)
- **Keynote**: Aspects of Neuroscience, Warsaw (2017)

- Symposium: Dutch Experimental Psychology society (2017)
- Invited Symposium: UK-Israel Social Cognition, UCL (2017)
- Symposia (x2): ICON, Amsterdam (2017)
- Invited Dept. Seminar: Freie Universität Berlin's (2017)
- Symposium: Control Processes, San Diego (2016)
- **Keynote**: ESCAN 2016 meeting, Porto (2016)
- Invited Dept. Seminar: Psychology, UCL (2016)
- Symposium: Social and Affective Neuroscience Society, NY, USA (2016)
- Invited Dept. Seminar: Experimental Psychology, Ghent University (2015)
- Invited Dept. Seminar: ETH Zurich (2015)
- Symposium: Experimental Psychology Society, London (2013)
- Invited Dept. seminar: Institute of Neuroscience, Trinity College, Dublin (2012)
- Symposium: Annual meeting of the Organization for Human Brain Mapping (2009)

Leadership, Management, Service and Citizenship

Conference, summer school and seminar series leadership:

- Lead organiser for Mechanistic Basis of Foraging, Birmingham, 2025
- Lead organiser for Control Processes conference, Birmingham, 2024: https://uobevents.eventsair.com/control-processes-conference-2024/
- Co-Lead organiser of the Birmingham-Leiden, Computational Social Cognition Summer School, 2024 and organising committee member in 2025 https://www.compsoccog.com
- Society for Social Neuroscience conference co-organiser (2021, 2024, 2025)
- Co-lead organiser of the 2-day international Social Motivation Symposium, Israel (2019)
- Behavioural and Cognitive Neuroscience seminars lead organiser, University of Oxford (2015-2019)
- 1 day Workshop on decision neuroscience, University of Oxford (2014)

Leadership and management:

- Lead and creator of the Grant Planning Support (GPS) scheme (2023 – present)
- Research infrastructure coordinator, School of Psychology (2023 – 2024)
- Member of the CHBH Strategy Committee (2022 – present)
- BBSRC Special Cognitive Computational Neuroscience grant call panel member (2022)
- BBSRC 'Pool of Experts' member (2022 – present)
- Theme leader for the IMH Multidisciplinary approaches to the neuroscience of mental health (2022 – 2024)
- School of Psychology space planning group member (2021 - 2022)
- Society for Social Neuroscience Awards committee lead (2021)
- Society for Social Neuroscience board member *(*2019 – *present)*
- UoB BBSRC strategy committee Psychology (2021 – Present)
- CHBH high performance computing lead (2021 – 2022)
- Centre for Human Brain Health events committee faculty lead (2021 - 2024)
- People and Culture early career researcher committee member (2019 -2020)
- Medical Sciences Division Research Staff Advisory group (2019-2020)
- Internal grant peer feedback (2017 – present)
- Early Career Departmental board representative and early career committee developer and lead (2017 - 2019)
- PhD mentorship program creator and management (2010-2011)

Academic Service:

- ***Editorial:*** Editorial Board *Scientific Reports* (2017 – present); *PLOS Biology* (2022)

- ***Journal reviewing:*** *Nature Human Behaviour, Nature Communications, eLife, Current Biology, PLoS Biology, PNAS, Journal of Neuroscience, Psychological Science, Journal of Experimental Psychology: General, Brain, Trends in Cognitive Sciences, +30 more other journals*

- ***Grant reviewing:*** *Wellcome Trust, BBSRC, MRC, NSF(US), ISF (Israel), INSERM (France)* and several others

- ***Phd Examinations:*** Dr. Jen Siegal, 2018 (University of Oxford; Supervisor: Dr. Molly Crockett); Dr. Mark Burrel, 2019, (University of Cambridge; Supervisor: Prof. Wolfram Schultz); Dr. Benjamin Chew 2019,(UCL; Supervisor: Dr. Robb Ruttledge); Dr. William De Doncker, 2021 (UCL; Supervisor: Dr. Anna Kuppuswamy); Dr. Lieke Hofmans, 2021 (Radbound University; Supervisor: Prof. Roshan Cools); Dr. Hugo Fleming, 2022 (UCL; Supervisor: Prof. Jon Roiser); Dr. Lydia Hickman 2024 (University of Birmingham, Supervisor: Prof. Jen Cook), Dr. Isabella Colic (University of Cardiff, 2024); Dr Sam Hewitt (UCL, Supervisor: Prof. Tobias Hauser)

Mentorship:

- Mentoring 3 new faculty upon joining the CHBH (2022 – present)
- Mentor for Dr. Romy Fromer onAMS Springboard award (2024 – present)
- Mentor for ECR on Wellcome Trust Early Career Award (2024 – present)
- Mentor for Dr (now Professor). Saloni Krishnan (2020 – present) across an AMS springboard award and MRC New investigator award at Royal Holloway, University of London
- As ECR rep for the Department of Experimental Psychology I mentored multiple postdocs in grant applications and career development (2018 – 2019)
- Lead on the development of peer to peer PhD student mentoring scheme in the Psychology Department at Royal Holloway, University of London (2009 – 2010)

Major Collaborations: I have multiple major collaborations nationally and internationally, and I am a member of three major national/international consortia:

  - Active collaborations with more 40 academics across 12 countries
  - I am a collaborator on the many labs climate change project (https://manylabsclimate.wordpress.com) which brings together more than 200 collaborators to collect data globally on which interventions make people more willing to act on climate change;
  - A member of the international collaboration on the Social and Moral Psychology of Covid-19 (https://icsmp-covid19.netlify.app) which collected data from 69 countries during the first year of the pandemic, leading to 3 publications;

Enterprise, Engagement, and Impact

For all publications from our group I deliver press releases and regularly engage with the media.

- Over 6000 twitter/X/Bluesky followers on two accounts used for public as well as academic engagement and impact

Policy Impact

- Co-Investigator on an ESRC Impact acceleration grant to convey results of our Covid-19 research to SAGE and the WHO during the pandemic (2020)

Coverage in the media:

- Coverage of Lockwood…Apps (2022) *Current Biology* in multiple news outlets including *Scientific American, Medium,* and the *BBC*
- Coverage of Muller et al., (2021) *Nature Communications* in 6 news outlets
- Coverage of Nitschke et al., (2021) in two *PsychologyToday* blogs
- Coverage of Lockwood et al., (2021) in multiple news outlets including Daily Mail - https://www.dailymail.co.uk/sciencetech/article-9478511/Older-adults-likely-make-effort-help-study-shows.html, Daily telegraph, Daily Star, INews
- Coverage of Lockwood et al., (2020) in two *PsychologyToday* blogs
- Coverage of Muller & Apps (2020) in 15 news outlets and in a discussion on NPR radio - https://www.npr.org/sections/health-shots/2019/09/26/764604968/too-much-training-can-tax-athletes-brains?utm_source=twitter.com&utm_medium=social&utm_term=nprnews&utm_campaign=npr
- Coverage of Le Heron et al., (2017) in 2 news outlets
- Coverage of Balsters et al., (2017) In 2 news outlets
- Coverage of Lockwood et al., (2017) on BBC Oxford.
- Coverage of Lockwood et al (2016) in over 20 outlets, including Daily Mail, Guardian, Fox News and the Sun and New Scientist
- Coverage of Apps et al., (2015) on BBC News (https://www.bbc.co.uk/news/education-31503265), BBC Oxfordshire, O Globo, Le Figaro,
- Apps et al., (2015) awarded Research of the Week from the Guardian- https://www.theguardian.com/teacher-network/2015/feb/20/scientists-teachers-brains-work-weekly-news-review

Blogs and Press Interviews

- Co-wrote multiple blog about our research for PsychologyToday for most publications from the lab (2022 - present)
- Interviewed for article in Well&Good - https://www.wellandgood.com/types-of-fatigue/
- Wrote a blog for the Conversation on Apps et al., (2015)
- Interviewed for article on our research for Men's Health (https://www.menshealth.com/trending-news/a19539520/best-life-remember-faces/)

Widening Participation:

- Co-organiser of the University's brain awareness week activities at the Midlands Arts Centre (2023 & 2024) – over 200 attendees from members of the public
- Publicly available Youtube video about our research (2022) - https://www.youtube.com/watch?v=-Sm9Ok9CEOE
- Publicly available Youtube video about our research (2021) - https://www.youtube.com/watch?v=zShpCzalPYk
- Engagement and presentations to IMH Youth Advisory group about our research to receive patient with lived experience input on grant applications (2021-2022)
- Co-organiser of Experimental Psychology's brain awareness week activities (2019-2020)
- Myself and members of my lab presented at the IF science festival (2016 – 2019) total over 1000 attendees
- Myself and members of my lab presented at the Abingdon science festival (2016 – 2019) total over 1000 attendees

- Neuropsychology centre patient & carer events organiser and contributor (2015-2019) total over 300 attendees

Industry Engagement:

- Consultancy with Eriksolhm and Oticon Ltd (2022 – present)
- Collaboration with Opteran Technologies (2022 – present)

Education

Teaching Design & Leadership

- Core-practical for 2nd year Psychology lead organiser (2018-2019)
- 3rd year BSc. Psychology Neuroanatomy post-mortem brain practical organiser (2011-2013)

Teaching delivery/marking

- BSc. Psychology lectures on 'What motivates you' (2023 - present)
- MSc. Brain Imaging and Cognitive neuroscience lectures (2021 - present)
- MSc. in Psychology and Neuroscience lecturer (2017 - 2019)
- Experimental Psychology tutorials (2015 - 2017)
- 2nd year Psychology – The self in perception and cognition (2012)
- 2nd year BSc. Psychology visiting lectures on dopamine (2010 - 2015)
- MSc. Cognitive neuroscience – Gross anatomy (2010 - 2011)
- MSc. Cognitive neuroscience – Functional anatomy (2010 - 2011)
- Applied Social Psychology MSc. – Methods to study the social brain (2011)
- 1st and 2nd year Psychology statistics demonstrator (2008)
- 3rd year BSc. Psychology Neuroanatomy post-mortem brain practical demonstrator (2009 – 2013)

Supervision

Project supervision:

- >55 undergraduate student dissertation / final year projects supervised in Psychology, Medicine and Biomedicine since 2010
- Currently supervising intercalated medical students annually (2020 - present)
- Current supervisor of MSc. Brain imaging and cognitive neuroscience students (2020 - present)
- >20 MSc. students in Psychology and Neuroscience since 2013
- 5 MSc. students on Erasmus programs (2016 - 2020)

Postdoc Supervisor:

- Dr. Hikaru Sugimoto (2024 - present) – JSPS Postdoctoral Fellow
- Dr. Meijia Li (2024 - present) – JSPS Postdoctoral Fellow
- Dr. Selma Lugtmeijer (2023 – present)
- Dr. Sebastian Contreras-Huerta (2021 – 2023, Now Assistant Professor at Universidad Adolfo Ibanez, Chile)
- Dr. Roberta Roberts (2021 – 2024, now a postdoc at University of Birmingham)
- Dr. Anthony Gabay (2018-2021) – ESRC Postdoc Fellowship. Now a data scientist in industry.
- Dr. Andrea Pisauro (2018-2024 – Assistant Professor, Plymouth University)

PhD Primary Supervisor:

- Nikita Mehta (2024 – present)

- Jamie Talbot (2022 - present)
- Emma Scholey (2021 - present)
- Katia Dudzikowska (2020 - present)
- Dr. Cody Kommers (2019 - 2022)
- Dr. Sebastian Contreras-Huerta (2016 - 2021; Now Assistant Professor at Universidad Adolfo Ibanez, Chile)
- Dr. Tanja Mueller (2016 - 2021; Now a Swiss National Science Foundation postdoc Fellow, University of Zurich)

PhD Co-supervision:

- Zhilin Shu (2022 – present)
- Dr. Campbell Le Heron (2014 - 2018; Lecturer and Neurologist, New Zealand Brain Research Initiative)
- Dr. Harry Farmer (2011 - 2013; Lecturer Greenwich University)

Publications on next page

Publications

Citations: **>7600** H-Index: 40; Google Scholar: https://bit.ly/2Lr6wOC

Key publications

1. Lockwood, P.L., Wittmann, M.K., Nili, H., Matsumoto-Ryan, M., Abdurahman, A., Cutler, J., Husain, M., **Apps, M.A.,** (2022) Distinct neural representations for prosocial and self-benefiting effort. *Current Biology* 32, 4172–4185.
2. Muller. T., Klein-Flugge, M., Manohar, S., Husain, M., & **Apps, M.A.J**. (2021). Neural and computational mechanisms of fatigue and persistence in effort-based choice. *Nature Communications. **winner of the Society for Neuroeconomics best paper 2022*
3. Lockwood, P.L., Abdurahman, A., Tamm, M., Drew, D., Gabay, A., Husain, M., & **Apps, M.A.J.,** (2021). Ageing increases prosocial motivation for effort. *Psychological Science. Preprint* doi: 10.31234/osf.io/8c5ra
4. Lockwood, P.L., **Apps, M.A.J**.^ & Chang, S.W.C.^ (2020). Is there a social brain? Implementations and Algorithms. *Trends in Cognitive Science.* ^ equal contributors. ***Winner of the SANS Innovation Award 2022.*
5. Le Heron, C., Kolling, N., Plant, O., Kienast, A., Janska, R., Fallon, S., Husain, M., & **Apps, M.A.J.** (2020). Dopamine modulates dynamic decision-making during foraging. *Journal of Neuroscience*
6. Chong, T-J. T.^, **Apps, M.A.J**.,^ Sillence, A., Giehl, K., Grima, L., & Husain, M. (2017). Neurocomputational mechanisms underlying subjective valuation of effort costs. *PLoS Biology. ^ equal contributors.*
7. Lockwood, P.L., Hamonet, M., Zhang, S.H., Ratnavel, A., Salmony, F.U., Husain, M., **Apps, M.A.J.** (2017). Prosocial apathy for helping others when effort is required. *Nature Human Behaviour.*
8. **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.*
9. **Apps, M.A.J**., & Tsakiris, M (2014). The free-energy self: A predictive coding account of self-recognition. *Neuroscience and Biobehavioural Reviews.*

All publications:

10. Talbot, J., Cutler, J., Tamm, M., Little, S. J., Harmer, C. J., Husain, M., Lockwood, P. L., & **Apps, M. A**. (2025). Dopamine boosts motivation for prosocial effort in Parkinson's disease. *Journal of Neuroscience*.
11. Gueguen, M., Cutler, J., Drew, D., **Apps, M. A**., Jeyaretna, D. S., Husain, M., Manohar, S. G., & Lockwood, P. L. (2025). Ventromedial prefrontal cortex lesions disrupt learning to reward others. *Brain*, awaf056.
12. Morelli, M., Dudzikowska, K., Deelchand, D. K., Quinn, A. J., Mullins, P. G., **Apps, M. A**., & Wilson, M. (2025). Functional Magnetic Resonance Spectroscopy of Prolonged Motor Activation using Conventional and Spectral GLM Analyses. *Imaging Neuroscience*
13. Lockwood, P. L., Cutler, J., Drew, D., Abdurahman, A., Jeyaretna, D. S., **Apps, M. A.,** Husain, M., & Manohar, S. G. (2024). Human ventromedial prefrontal cortex is necessary for prosocial motivation. *Nature Human Behaviour,* 1–14.

14. Micula, A., Christensen, J. H. K., Wendt, D., Innes-Brown, H., Johnsrude, I., **Apps, M**., Dau, T., & Flensborg-Madsen, T. (2024). Development of measures to assess listening-related effort and fatigue in daily life among hearing aid users: Protocol for a quantitative field trial. *BMJ Open*, 14(12), e082041.
15. Su, Z., Garvert, M.M., Zhang, L., Manohar, S.G., Vogel, T.A., Thomas, L., Balsters, J.H., Husain, M., **Apps, M.A.,** Lockwood, P.L., 2024. Older adults are relatively more susceptible to impulsive social influence than young adults. *Commun. Psychol*. 2, 87.
16. Morris, L.-A., Horne, K.-L., Manohar, S., Paermentier, L., Buchanan, C., MacAskill, M., Myall, D., **Apps, M.,** Roxburgh, R., & Anderson, T. (2024). Decision cost hypersensitivity underlies Huntington's disease apathy. *Brain*, awae296.
17. Doell, K. C., Todorova, B., Vlasceanu, M., Bak Coleman, J. B., Pronizius, E., Schumann, P., **Apps, M.**, Azevedo, F., Patel, Y., Berkebile-Wineberg, M. M., & Brick, C. (2024). The International Climate Psychology Collaboration: Climate change-related data collected from 63 countries. *Scientific Data*, *11*(1), 1066.
18. Gabay, A. S., Pisauro, A., O'Nell, K. C. & **Apps, M. A**. Social environment-based opportunity costs dictate when people leave social interactions. *Communications Psychology* 2, 42 (2024).
19. Hoy, C. W. *et al.* Beta and theta oscillations track effort and previous reward in the human basal ganglia and prefrontal cortex during decision making. *Proceedings of the National Academy of Sciences* 121, e2322869121 (2024).
20. Scholey, E., Lugtmeijer, S. & **Apps, M. A. J.** The neuroeconomics of work: Computational and neural mechanisms of the dynamics of effort-based decisions. Preprint at https://doi.org/10.31234/osf.io/csbv7 (2024). [Book chapter]
21. Vlasceanu et al., (2024). Addressing climate change with behavioral science: A global intervention tournament in 63 countries. *Science Advances*
22. Gaule, A; Martin, P; Lockwood, P; Cutler, J; **Apps, M;** Roberts, R; Phillips, H; Brown, K; McCrory, E.; Viding, E. (2024). Reduced prosocial motivation and effort in adolescents with conduct problems and callous-unemotional traits. *Journal of Child Psychology and Psychiatry*
23. Matthews, J., Pisauro, M. A., Jurgelis, M., Mueller, T., Vassena, E., Chong, T^., & **Apps, M. A. J.^** (2023). Computational mechanisms underlying the dynamics of physical and cognitive fatigue. *Cognition.* ^equal contributors; **highlighted in commentary by Bijleveld et al., 2023, *Trends in Cognitive Sciences*.
24. Little, S., **Apps, M.A.,** Ricciardi, L., (2023). Uncovering the neurophysiology of neuropsychiatric symptoms in Parkinson's disease. *NPJ Parkinsons Disease*
25. Forbes, P., Aydogan, G., Braunstein, J., Todoroba, B., Wagner, I., Lockwood, P.L., **Apps., M.A.,** Ruff, C., Lamm, C. (2023). Acute stress reduces effortful prosocial behaviour. *Elife*
26. Azevedo, F., et al., (2023). Social and Moral Psychology of Covid-19 across 69 countries. *Scientific Data*
27. Contreras-Huerta, L.S., Coll, M.-P., Bird, G., Yu, H., Prosser, A., Lockwood, P.L., Murphy, J., Crockett, M.J.,^^ **Apps, M.A.**,**^^** (2023). Neural representations of vicarious rewards are linked to interoception and prosocial behaviour. *NeuroImage* 119881.

28. Scholey, E., & **Apps, M.A.J.,** (2022). Fatigue: Tough days at work change your prefrontal metabolites. *Current Biology.*
29. Pisauro, M., Fouragnan, E., Arabadzhiyska, D., **Apps, M.,^** Philiastides, M.,^ (2022). Neural implementation of computational mechanisms underlying the continuous trade-off between cooperation and competition. *Nature Communications* 13, 1–18. ^equal contributors
30. Müller, T., Husain, M., **Apps, M.A.J.,** (2022). Preferences for seeking effort or reward information bias the willingness to work. *Scientific Reports* 12, 19486. https://doi.org/10.1038/s41598-022-21917-7
31. Yu, H., Contreras-Huerta, L.S., Prosser, A.M., **Apps, M.A.,** Hofmann, W., Sinnott-Armstrong, W., Crockett, M.J., 2022. Neural and cognitive signatures of guilt predict hypocritical blame. *Psychological Science* 33, 1909–1927.
32. Pavlović et al., (2022) Predicting attitudinal and behavioral responses to COVID-19 pandemic using machine learning. *PNAS Nexus*
33. Van Bavel, J., et al., (multiple authors from 62 different countries). National identity predicts public health support during a global pandemic. (2022). *Nature Communications*. preprint: https://doi.org/10.21203/rs.3.rs-67323/v1
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