

Tom E. Hardwicke

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Academic appointments

- Jan 2019- **Postdoctoral Scholar.**
present Meta-Research Innovation Center Berlin (METRIC-Berlin),
Berlin Institute of Health QUEST Center,
Charité – Universitätsmedizin Berlin, Germany.
Advisor: John Ioannidis.
- Jan 2017- **Postdoctoral Fellow.**
Dec 2018 Meta-Research Innovation Center at Stanford (METRICS),
Stanford University, United States of America.
Advisors: John Ioannidis, Steven Goodman, Michael Frank.

Education

- 2016 **PhD Experimental Psychology.**
University College London, United Kingdom.
Advisor: David Shanks
- 2012 **MRes Brain Imaging and Cognitive Neuroscience.**
The University of Birmingham, United Kingdom.
- 2011 **BSc Psychology** (First Class Honours).
Cardiff University, United Kingdom.

Awards

- 2013 **Best Poster Prize.**
Economic and Social Research Council Annual Meeting.
- 2011 **The George Westby Prize** (highest degree grade).
Cardiff University.
- 2011 **The Stuart Diamond Memorial Prize** (best final year project).
Cardiff University.
- 2011 **The British Psychological Society Undergraduate Award.**
Cardiff University.
- 2010 **Best Presentation Award.**
British Psychological Society Student Conference.

Publications

Hardwicke, T. E., Serghiou, S., Janiaud, P., Danchev, V., Crüwell, S., Goodman, S. N., & Ioannidis, J. P. A. (in press). Calibrating the scientific ecosystem through meta-research. *Annual Review of Statistics and its Application*.

[open access version]: <https://doi.org/10.31222/osf.io/krb58>

Hardwicke, T. E., & Ioannidis, J. P. A. (2019). Petitions in scientific argumentation: dissecting the request to retire statistical significance. *European Journal of Clinical Investigation*.

[open access version]: <https://doi.org/10.1111/eci.13162>

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Nosek, B. A., Beck, E. D., Campbell, L., Flake, J. K., **Hardwicke, T. E.,** Mellor, D. T., van 't Veer, A. E., & Vazire, S. (2019). Preregistration is hard, and worthwhile. *Trends in Cognitive Sciences*.

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Hardwicke, T. E., Frank, M. C., Vazire, S., & Goodman, S. N. (2019). Should psychology journals adopt specialized statistical review? *Advances in Methods and Practices in Psychological Science*.

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Hardwicke, T. E., Mathur, M. B., MacDonald, K. E., Nilsonne, G., Banks, G. C., Kidwell, M. C., Hofelich Mohr, A., Clayton, E., Yoon, E. J., Henry Tessler, M., Lenne, R. L., Altman, S., Long, B., & Frank, M. C. (2018). Data availability, reusability, and analytic reproducibility: Evaluating the impact of a mandatory open data policy at the journal *Cognition*. *Royal Society Open Science*, 5, e180448.

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Hardwicke, T. E. & Ioannidis, J. P. A. (2018). Populating the Data Ark: An Attempt to retrieve, preserve, and liberate data from the most highly-cited psychology and psychiatry articles. *PLOS ONE*, 13, e0201856.

[open access version]: <https://doi.org/10.1371/journal.pone.0201856>

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Hardwicke, T. E., Tessler, M. H., Peloquin, B. N., Frank, M. C. (2018). A Bayesian decision-making framework for replication. *Behavioral and Brain Sciences*, 41, e132.

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- Klein, O., **Hardwicke, T. E.**, Aust, F., Breuer, J., Danielsson, H., Hofelich Mohr, A., IJzerman, H., Nilsonne, G., Vanpaemel, W., & Frank, M. C. (2018). A practical guide for transparency in psychological science. *Collabra: Psychology*, 4, 20.
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[materials]: <https://osf.io/xf6ug/>
- Cristea, I. A., Naudet, F., Shanks, D. R., **Hardwicke, T. E.** (2017). Post-retrieval Tetris should not be likened to a 'cognitive vaccine'. *Molecular Psychiatry*. 1-2.
[open access version]: https://tomhardwicke.netlify.com/files/Cristea_tetris_2017.pdf
[data/analysis]: <https://osf.io/2mcra/>
- Hardwicke, T. E.** (2016). Persistence and plasticity in the human memory system: An empirical investigation of the overwriting hypothesis. *PhD Thesis*.
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- Hardwicke, T. E.** & Shanks, D. R. (2016). Reply to Walker and Stickgold: Proposed boundary conditions on memory reconsolidation will require empirical verification. *Proceedings of the National Academy of Sciences of the United States of America*, 113, 1-2.
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- Kidwell, M. C., Lazarević, L. B., Baranski, E., **Hardwicke, T. E.**, Piechowski, S., Falkenberg, L-S., Kennett, C., Slowik, A., Sonleitner, C., Hess-Holden, C., Errington, T. M., Fiedler, S., & Nosek, B. A. (2016). Badges to acknowledge open practices: A simple, low cost, effective method for increasing transparency. *PLOS Biology*, 14, 1-15.
[open access version]: <https://dx.doi.org/10.1371/journal.pbio.1002456>
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- Hardwicke, T. E.**, Mahdi, T., & Shanks, D. R. (2016). Post-retrieval new learning does not reliably induce human memory updating via reconsolidation. *Proceedings of the National Academy of Sciences of the United States of America*, 113, 5206-5211.
[open access version]: <https://tomhardwicke.netlify.com/files/sequenceRecon.pdf>
[pre-registration/materials/data/analysis]: <https://osf.io/gpeq4/>
- Vadillo, M. A., **Hardwicke, T. E.**, Shanks, D. R. (2016). Publication bias, vote counting, and money priming effects: A comment on Rohrer, Pashler, and Harris (2015) and Vohs (2015). *Journal of Experimental Psychology: General*, 145, 655-663.
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[data]: <https://osf.io/4e3gy/>
- Baker, R., Dexter, M., **Hardwicke, T. E.**, Goldstone, A., Kourtzi, Z. (2014). Learning to predict: Exposure to temporal sequences facilitates prediction of future events. *Vision Research*, 99, 124-133.
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- Ludwig, C. J. H., Farrell, S., Ellis, L. A., **Hardwicke, T. E.**, & Gilchrist, I. D. (2012). Context-gated statistical learning and its role in visual-saccadic decisions. *Journal of Experimental Psychology: General*, 141, 150-169.

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Invited presentations

Hardwicke, T. E. (2019). Calibrating the scientific ecosystem through meta-research. *Open Science Conference 2019, University of Trier*.

Hardwicke, T. E. (2018). Rehabilitating the scientific ecosystem. *The Bank of England*.

Hardwicke, T. E. (2018). What is this thing we call 'open science'? *Reproducible Science at Stanford, Stanford University*.

Hardwicke, T. E. (2018). Fostering the preservation, liberation, and re-use of data in psychological science. *Department of Psychology, University of California, Davis*.

Hardwicke, T. E. (2017). Principles of reproducible research. *Stanford SPECTRUM Scholars Seminar, Stanford University*.

Conference presentations

Hardwicke, T. E., Mathur, M. B., Nilsonne, G., McCarthy, R., Hofelich Mohr, A., & Lindsay, D. S. (2018). Analysis Exchange: Developing an online platform to request verification of analytic reproducibility and statistical expertise. *Society for Improving Psychological Science Conference*.

Hardwicke, T. E. (2018). SMART pre-registrations: Developing a citation system to facilitate comparison of protocols and papers. *Society for Improving Psychological Science Conference*.

Hardwicke, T. E. (2017). Open data are not enough: An evaluation of data availability and computational reproducibility at the journal Cognition. *Department of Psychology, Stanford University*.

Hardwicke, T. E. (2017). Open data are not enough: An evaluation of data availability and computational reproducibility at the journal Cognition. *Society for Improving Psychological Science Conference*.

Hardwicke, T. E., & Shanks, D. R. (2016). Revisiting the misinformation effect: Does reconsolidation overwrite existing memories? *6th International Conference on Memory*. [poster]

Hardwicke, T. E., Mahdi, T., & Shanks, D. R. (2016). Post-retrieval new learning does not reliably induce human memory updating via reconsolidation. *6th International Conference on Memory*.

Hardwicke, T. E., & Shanks, D. R. (2015). Does reconsolidation enable human memory updating? *Experimental Psychology Society London Meeting*.

Hardwicke, T. E., & Shanks, D. R. (2014). Does reconsolidation enable human memory updating? *UCL Faculty of Brain Sciences Symposium*. [poster]

Hardwicke, T. E. (2013). The stability and plasticity of human knowledge. *ESRC UCL DTC Annual Meeting*. [poster]

Hardwicke, T. E., Ludwig, C. J. H., Farrell, S., Ellis, L. A., & Gilchrist, I. D. (2010). Learning the environmental statistics facilitates effective gaze allocation. *BPS Welsh Branch Annual Student Conference*.

Hardwicke, T. E., Ludwig, C. J. H., Farrell, S., Ellis, L. A., & Gilchrist, I. D. (2010). Statistical learning facilitates effective gaze allocation. *BVI Young Researchers' Colloquium*. [poster]

Grants and funding

- 2017-2018 **Postdoctoral Fellowship**
Meta-Research Innovation Center at Stanford (METRICS), USA.
- 2016 **Grindley Grant (travel), International Conference on Memory**
Experimental Psychology Society, UK.
- 2016 **Travel Grant, International Conference on Memory**
University College London, UK.
- 2015 **ESRC Collaborative Placement Funding**
Economic and Social Research Council, UK.
- 2014 **Travel Grant, Human Factors in Science Symposium**
University College London, UK.
- 2012 **ESRC PhD Studentship**
Economic and Social Research Council, UK.
- 2009 **Undergraduate Research Opportunities Program**
Cardiff University, UK.

Teaching experience

- 2018 **Ad-Hoc Lecturer** ("Principles of research reproducibility and transparency"). *Essentials of Clinical Research (graduate level)*, Stanford Medicine, Stanford University.

- 2018 **Ad-Hoc Lecturer** (“Creating reproducible research reports using R Markdown”). *SPSP Webinar*. [with Michael Frank]
- 2018 **Ad-Hoc Lecturer** (“How to write a reproducible scientific paper”). *Experimental Methods (graduate-level)*, Department of Psychology, Stanford University.
- 2018 **Ad-Hoc Lecturer** (“Data visualization in R”). *Introduction to R (undergraduate-level)*, Department of Psychology, Stanford University.
- 2018 **Ad-Hoc Lecturer** (“Repeatability, reproducibility, and validation”). *Scientific Method and Bias (undergraduate-level)*, Stanford University.
- 2018 **Ad-Hoc Lecturer** (“Principles of reproducible research”). *Essentials of Clinical Research (graduate level)*, Stanford Medicine, Stanford University.
- 2017 **Ad-Hoc Lecturer** (“On the nature of replication”). *CSLI Summer School (undergraduate-level)*, Center for the Study of Language and Information, Stanford University.
- 2017 **Ad-Hoc Lecturer** (“Building a reproducible research workflow”). *Essentials of Clinical Research (graduate-level)*, Stanford Medicine, Stanford University.
- 2014 - 2016 **Postgraduate Teaching Assistant**. *Research and Quantitative Methods in Psychology (undergraduate-level)*, Department of Experimental Psychology, University College London.
- 2016 **Ad-hoc lecturer** (“Introduction to open science”). *Social Cognition (graduate-level)*, Department of Experimental Psychology, University College London.
- 2015 **Ad-hoc lecturer** (“Introduction to memory & learning”). *Cognitive and Decision Sciences (graduate-level)*, Department of Experimental Psychology, University College London.

Student supervision and mentorship

- 2019 - present Sophia Crüwell (PhD)
- 2018 Athena Braun (undergraduate).
- 2017 Emily Huxtable (undergraduate).
- 2016 Bethany Manning (undergraduate).
- 2015 Gudmundur Haraldsson (masters).
- 2014 Mahdi Taqi (masters).

Additional roles and professional service

- 2018 - present **Executive Committee Member.** Society for Improving Psychological Science
- 2017 - present **Open Science Catalyst.** Berkeley Initiative for Transparency in the Social Sciences (BITSS).
- 2015 - present **Open Science Ambassador.** Center for Open Science.
- 2019 **Chair (Conference Program Committee).** Society for Improving Psychological Science 2019 Annual Conference, Rotterdam, NL.
- 2015 **Scholar in Residence.** Center for Open Science.
- 2015 **Convener.** Is Science Broken? | Public debate | University College London.
- 2012 – 2015 **Co-founder of CRITUCL.** Postgraduate discussion group.
- 2012 – 2015 **Opticon1826 Faculty Editor (Brain Sciences).** University College London.
- 2012 – 2014 **ESRC Student Representative.** University College London.
- 2009 - 2010 **Research collaborator.** School of Psychology | University of Bristol
- Ad-hoc **Peer-reviewer.** Royal Society Open Science | Nature Human Behaviour | Research Integrity and Peer Review | Advances in Methods and Practices in Psychological Science | Collabra: Psychology | Journal of Experimental Psychology: Learning Memory & Cognition | PLoS ONE | Behavioural Brain Research | PeerJ | Sports Medicine | Communications of the ACM | Perspectives on Psychological Science.

Transparent research practices

I am a strong advocate of transparent research practices. The following resources can be found via my Open Science Framework page (<https://osf.io/i8w73>):

- Pre-prints
- Open data
- Open materials
- Open analysis scripts
- Pre-registered study protocols

Programming languages

R, JavaScript, HTML

References

Available on request.