

# Tom E. Hardwicke

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## Academic appointments

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- Jan 2019- **Postdoctoral Scholar.**  
present Meta-Research Innovation Center Berlin (METRIC-B),  
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

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- 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

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- 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

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**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>

Ferrero, M., **Hardwicke, T. E.,** Konstantinidis, E., & Vadillo, M. A. (in press). The effectiveness of refutation texts to correct misconceptions among educators. *Journal of Experimental Psychology: Applied*.

[open access version]: <https://doi.org/10.31234/osf.io/ehybj>

[materials/data/analysis]: <https://osf.io/73a9y/>

**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>

[pre-registration/materials/data/analysis]: <https://osf.io/8aenp/>

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*, 23, 815-818.

[open access version]: <https://doi.org/10.31234/osf.io/wu3vs>

**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*, 2, 240-249.

[open access version]: <https://doi.org/10.1177/2515245919858428>

[materials/data/analysis]: <https://osf.io/rhf6g/>

**Hardwicke, T. E.** & Ioannidis, J. P. A. (2018). Mapping the universe of Registered Reports. *Nature Human Behaviour*, 2, 793-796.

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

[materials/data/analysis]: <https://osf.io/7dpwb/>

**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.

[open access version]: <https://dx.doi.org/10.1098/rsos.180448>

[pre-registration/materials/data/analysis]: <https://osf.io/wn8fd/>

**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>

[materials/data/analysis]: <https://osf.io/64qvb/>

**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.

[open access version]: <https://dx.doi.org/10.17605/osf.io/n3yah>

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.

[open access version]: <http://doi.org/10.1525/collabra.158>

[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](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*.

[open access version]: <https://doi.org/10.31237/osf.io/r4c32>

[materials/data/analysis]: <https://osf.io/rxtgs/>

**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.

[open access version]: <https://tomhardwicke.netlify.com/files/sequenceReconReply.pdf>

Kidwell, M. C., Lazarević, L. B., Baranski, E., **Hardwicke, T. E.,** Piechowski, S., Falkenberg, L-S., Kennett, C., Slowik, A., Sonnleitner, 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>

[pre-registration/materials/data/analysis]: <https://osf.io/rfgdw/>

**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>

[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.

[open access version]: <https://psycnet.apa.org/doi/10.1037/xge0000157>

[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.

[open access version]: <https://doi.org/10.1016/j.visres.2013.10.017>

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.

[open access version]: <http://dx.doi.org/10.1037/a0024916>

## Invited presentations

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**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

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**Hardwicke, T. E.**, Wallach, J. D., Crüwell, S., & Ioannidis, J. P. A. (2019). Transdisciplinary estimates for the prevalence of transparency and reproducibility related research practices. *Association for Interdisciplinary Meta Research and Open Science Conference*.

**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? *6<sup>th</sup> 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. *6<sup>th</sup> 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

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- 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

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- 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

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- 2019 - present Maia Salholz-Hillel (PhD).
- 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 training and courses

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- 2019 Introduction to leadership in academia (supported by Wellcome Trust & UK Reproducibility Network), Cumberland Lodge, UK.

## Additional roles and professional service

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- 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 | General Psychiatry | PLoS ONE | Behavioural Brain Research | PeerJ | Sports Medicine | JMIR Dermatology | Cognition | Communications of the ACM | Perspectives on Psychological Science.

## Transparent research practices

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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

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R, JavaScript, HTML

## References

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Available on request.