

Ryutaro Uchiyama

Singapore University of Technology and Design

8 Somapah Rd, Singapore 487372

ryutaro_uchiyoama@sutd.edu.sg

Academic Positions

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| 2025– | Visiting Scientist
Centre for Research and Development in Learning (CRADLE)
Nanyang Technological University, Singapore |
| 2024– | Assistant Professor
Humanities, Arts, and Social Sciences Cluster
Singapore University of Technology and Design |
| 2023–2024 | Postdoctoral Research Fellow
Tübingen AI Center and University of Tübingen, Germany |
| 2023–2024 | Guest Scientist
Department of Computational Neuroscience
Max Planck Institute for Biological Cybernetics, Germany |
| 2021–2023 | Research Fellow
NTU–Cambridge Centre for Lifelong Learning and Individualised Cognition
Cambridge CARES (Centre for Advanced Research and Education in Singapore) and Nanyang Technological University, Singapore |
| 2017 | Research Programmer
Section of Brain Function Information
National Institute for Physiological Sciences, Japan |

Education

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| 2021 | PhD, Psychological and Behavioural Science
London School of Economics and Political Science, UK
Doctoral Thesis: <i>Cultural evolutionary production of human psychobiological variation and function</i> (Supervisor, Michael Muthukrishna) |
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- 2017 MA, Psychology – Behavioral and Evolutionary Neuroscience
Cornell University, USA
- 2013 BSc With Great Distinction, Psychology
University of Lethbridge, Canada
- 2006 Technical Diploma, Spatial Design
Kuwasawa Design School, Tokyo, Japan

Journal Articles

- Tong, K., Chan, Y. N., Cheng, X., Cheon, B., Ellefson, M., Fauziana, R., Feng, S., Fischer, N., Gulyás, B., Hoo, N., Hung, D., Kalaivanan, K., Langley, C., Lee, K. M., Lee, L. L., Lee, T., Melani, I., Melia, N., Pei, J. Y., Raghani, L., Sam, Y. L., Seow, P., Suckling, J., Tan, Y. F., Teo, C. L., **Uchiyama, R.**, Yap, H. S., Christopoulos, G., Hendriks, H., Chen, A., Robbins, T., Sahakian, B., Kourtzi, Z., Leong, V., CLIC Phase 1 Consortium. (2023). Study protocol: How does cognitive flexibility relate to other executive functions and learning in healthy young adults? *PLOS ONE*, 18(7), [e0286208](https://doi.org/10.1371/journal.pone.0286208).
- Lupyan, G., **Uchiyama, R.**, Thompson, B., & Casasanto, D (2023) Hidden differences in phenomenal experience. *Cognitive Science*, 47, e13239
- Uchiyama, R.**, Spicer, R., & Muthukrishna, M. (2022). Cultural evolution of genetic heritability. *Behavioral and Brain Sciences*, 45, e152 [Target Article]
- Uchiyama, R.**, Spicer, R., & Muthukrishna, M. (2022) Integrating cultural evolution and behavioral genetics. *Behavioral and Brain Sciences*, 45, e152 [Response to 29 Commentary Articles]
- Uchiyama, R.** & Muthukrishna, M. (2019). Archetypes are a poor primitive for a theory of mental representations. *Psychological Inquiry*, 30, 87–92
- Finlay, B.L. & **Uchiyama, R.** (2015) Developmental mechanisms channeling cortical evolution. *Trends in Neurosciences*, 38, 69–76.

Book Chapters

- Uchiyama, R.** & Muthukrishna, M. (2022). Cultural evolutionary neuroscience. In JY Chiao, SC Li, R Turner, SY Lee-Tauler, B Pringle (Eds.) *Handbook of Cultural Neuroscience and Global Mental Health*. Oxford University Press. — [PsyArXiv](https://doi.org/10.1017/9781009054444.008)

Finlay, B.L. & **Uchiyama, R.** (2020). The timing of brain maturation, early experience and the human social niche. In J. Kaas (Ed.), *Evolutionary Neuroscience, Second Edition*, 815–843. San Diego: Elsevier Academic Press.

Current Manuscripts

Tong, K., **Uchiyama, R.**, L. Fischer, N. L., Langley, C., Cheng, X., Kalaivanan, K., Melia, N., Feng, S., Marzuki, A. A., Talwar, A., Chan, Y. N., Fauziana, R., Hoo, N., Lee, K. M., Lee, L. L., Lee, T., Melani, I., Pei, J. Y., Raghani, L., Sam, Y. L., Tan, Y. F., Yap, H. S., Cheon, B., Gulyás, B., Hung, D., Seow, P., Suckling, J., Teo, C. L., CLIC Consortium, Christopoulos, G., Hendriks, H., Kourtzi, Z., Ellefson, M. R., Chen, S. H. A., Sahakian, B. J., Robbins, T. W., Leong, V. (under review). Broadening the construct of cognitive flexibility and its relevance to academic achievement and creativity.

Uchiyama, R., Tennie, C., & Wu, C. M. (in preparation). Hybridizing biological and computational culture

Uchiyama, R., (under review) Cross-cultural variation in the structure of internal representations.

Pham, T.Q., Yoshimoto, T., Niwa, H., Takahashi, H., **Uchiyama, R.**, Anderson, A.K., Sadato, N., & Chikazoe, J. (under review) Vision to value transformation along the brain's principal gradient.

Preregistered Methods

Uchiyama, R., Fischer, N. L., Fu, P., Lee, T., Cheng, X., Feng, S., Melani, I., Melia, N., Tong, K., Christopoulos, G. I., Hendriks, H., Leong, V., Robbins, T. W., Sahakian, B. J., Ellefson, M. R., Hung, D., Seow, P., Lee, T. C., Chen, S. H. A., & Kourtzi, Z. (2022). Assessing cognitive flexibility, other executive functions, and learning in healthy adolescents. *Open Science Framework*.
<https://doi.org/10.17605/OSF.IO/MD4TV>

Tong, K., **Uchiyama, R.**, Feng, S., Cheng, X., Kalaivanan, K., Leong, V., Christopoulos, G. I., Chen, S. H. A., Hendriks, H., Sahakian, B., Kourtzi, Z., & Robbins, T. W. (2021). Assessing cognitive flexibility, other executive functions, and learning in healthy adults. *Open Science Framework*.
<https://doi.org/10.17605/OSF.IO/6RC9H>

Melani, I., Christopoulos, G. I., Hendriks, H., Feng, S., Sam, Y. L., Melia, N., Shan, Y. H., Tong, K., **Uchiyama, R.**, Cheng, X., Leong, V., Sahakian, B. J., Robbins, T. W., Kourtzi, Z., & Chen, S. H. A. (2022). Cognitive flexibility and its association with

linguistic preferences, decision-making, tolerance of uncertainty, and perceived social support. *Open Science Framework*. <https://doi.org/10.17605/OSF.IO/AY9GR>

Other publications and popular press

Uchiyama, R., Spicer, R., & Muthukrishna, M. (2022) Book review for *The Genetic Lottery: Why DNA Matters for Social Equality* by K. P. Harden. *Evolutionary Studies in Imaginative Culture*, 6, 107–110

Uchiyama, R. (2022, April 15). “How Cultural Evolution Generates the Global Variation of Human Minds: Seeing culture as psychological R&D”. *The Mind Lives in Culture*, [Psychology Today](#).

Smolla, M., Invernizzi, E., Bazhydai, M., Casoli, M., Deffner, D., Faria, G.S., Jones, N., Kanwal, J., Staehler, A.M., **Uchiyama, R.** (2018). Second annual workshop of the Association of Early-Career Social Learning Researchers in St Andrews, Scotland. *Evolutionary Anthropology*, 27, 184-187.

Conference Talks & Invited Talks

- 2025 Uchiyama R. “TBC”. Keynote Talk, Cultural Evolution of Planet X workshop, International Conference for Artificial Life (ALife) (Kyoto, Japan)
- 2025 Uchiyama R. “Motor–environment exploration in the human developmental niche”. Asian Cultural Evolution Seminar Series (Online)
- 2025 Uchiyama R. “Reciprocal mind–environment construction in the human neurodevelopmental niche”. Lee Kuan Yew Centre for Innovative Cities, Singapore
- 2024 Uchiyama R. “Nature–nurture through the lens of cross-generational cultural transmission”. Science of Learning in Education Seminar Series, National Institute of Education, Singapore
- 2024 Uchiyama R. “Nature–nurture through the lens of cross-generational cultural transmission”. Humanities, Arts and Social Sciences Cluster, Singapore University of Technology and Design, Singapore
- 2024 Uchiyama R, Tennie C, Wu CM. “Cultural transmission and recombination of internal representations”. *Culture Conference* (Zürich, Switzerland)

- 2023 Uchiyama R. "Cultural dynamics shape genetic effects by structuring the developmental environment". Centre for Research in Pedagogy and Practice, National Institute of Education, Singapore
- 2023 Uchiyama R. "Cultural dynamics shape genetic effects by structuring the developmental environment". PELS Research Group, Faculty of Education, University of Cambridge, UK
- 2022 Lupyan G, Uchiyama R, Thompson B, & Casasanto D. "Hidden Differences in Human Experience". *Psychonomic Society* (Boston, USA)
- 2022 NTU–Cambridge CLIC School Team, Singapore Examinations and Assessment Board, Singapore Ministry of Education
- 2022 Uchiyama R, Lee T, Teo CL, Hung WLD. "A neurodevelopmental learning map for education research". *Redesigning Pedagogy International Conference*, National Institute of Education, Singapore
- 2022 Uchiyama R. "Cultural evolutionary dynamics and the production of psychological variation". St. Gallen Institute of Management in Asia, University of St. Gallen, Switzerland
- 2021 Uchiyama R, Fischer N, Teo CL, National Institute of Education (NIE), Science of Learning in Education Centre (SOLEC), Singapore
- 2021 Clinical Brain Lab (PI: Prof. Annabel Chen), Nanyang Technological University, Singapore
- 2021 Singapore Ministry of Education, Master Teachers Humanities Cluster, invited joint talk, Singapore
- 2021 Claremont Graduate University, *Cultural Competence* (course instructor: Prof. Robert Kiltgaard), USA
- 2020 盐 (Yan) Talk, Human Psychology Seminar Series (online), People's Republic of China
- 2019 Joe Wakano Lab. School of Interdisciplinary Mathematical Sciences, Meiji University, Japan
- 2019 London School of Economics Students Union (LSEU), *Behavioural Sciences Society Annual Conference*, UK
- 2018 Uchiyama R & Muthukrishna M. "General Intelligence as an emergent product of cultural complexity: Explaining the Flynn Effect". *Cultural Evolution Society* (Tempe, Arizona, USA)

- 2017 Uchiyama R & Muthukrishna M. “Testing the Cultural Brain Hypothesis”. *Cultural Evolution Society Inaugural Conference* (Jena, Germany)

Poster Presentations

- 2023 Uchiyama R, Tennie C, & Wu C. M. “Model-based assimilation transmits and recombines world models”. *Cognitive Computational Neuroscience* (Oxford, UK)
- 2019 Uchiyama R & Muthukrishna M. “The cultural evolution of cultural learning”. *Early-career Social Learning Researchers workshop* (Leipzig, Germany)
- 2018 Uchiyama R & Muthukrishna M. “Testing the Cultural Brain Hypothesis using phylogenetic path analysis”. *Early-career Social Learning Researchers workshop* (St Andrews, Scotland, UK)
- 2015 Uchiyama R & Edelman S. “Narrative-mediated transmission of causal knowledge”. *Emergent Meaning—Neural, Social, & Computational Perspectives* (Bethlehem, PA, USA)
- 2015 Uchiyama R & Finlay B. “Situating social learning in an evolutionarily conserved program of brain development”. *Mechanisms of Learning in Social Contexts, a workshop at ICDL-EPIROB* (Providence, RI, USA)

Public outreach

Blog hosted on *Psychology Today*, launched April 2022
[“The mind lives in culture”](#)

Assistant Curator of the Wilder Brain Collection, Cornell University

Tours given and discussion sessions held with the general public and journalists, 2014–2016, Cornell University
[video coverage](#)

Organization

2025–
SUTD HASS Human-Centred AI Seminar
Founder

2025–

SUTD Arts+Creativity+Health Seminar

Founder of a workshop series that explores the intersection of human health and “human generativity” in the era of generative AI

2021–2022

CLIC Computational Modelling Discussion Group

Co-led a discussion group on computational cognitive modeling within the Centre for Lifelong Learning and Individualised Cognition, with participants from Nanyang Technological University and the University of Cambridge.

2018–2020

PBS PhD Student Committee

Co-founder and member of a PhD student committee responsible for academic self-governance in the LSE Department of Psychological and Behavioural Science

12 March 2015

Symposium: “Cognitive and Evolutionary Approaches to Human Culture”

Lead organiser and panel moderator of a cross-disciplinary symposium at Cornell University

<http://cogevo.weebly.com/>

2014–2015

Collective Behavior Study Group, Cornell University

Co-founder and organiser of an inter-departmental graduate student journal club and speaker series

<http://collectivebehavior.weebly.com>

Supervision

Singapore University of Technology and Design (2024–)

Jordan LEE (Master’s student, co-supervised with Gim Song SOH)

Darren LEE (Undergraduate research assistant)

Shao Cong LOH (Undergraduate research assistant)

Tübingen AI Center (2023–2024)

Miriam Bautista (Master’s student on lab rotation, direct supervisor)

Joel Vasama (research assistant, co-supervised with Dr. Charley Wu)

NTU–Cambridge CLIC (2021–2023)

Phillis Wu (research associate, co-supervised with Dr. Teo Chew Lee, NIE)

Timothy Lee (research associate, co-supervised with Dr. Teo Chew Lee, NIE)

Yingqi Chui (research assistant, co-supervised with Dr. Teo Chew Lee, NIE)

Teaching

Instructor—Singapore University of Technology and Design

- Introduction to Psychology
- Collective Behavior
- Social Science: Understanding Behaviour, Culture & Society (group instruction)

Teaching Assistant—London School of Economics

MSc Programme in Social and Public Communication (Profs. Martin Bauer & Bradley Franks), 2018–19; 2019–20

Foundations of Psychological Science (Dr. Michael Muthukrishna), 2018–2019; Summer 2019

Teaching Assistant—Cornell University

- Human Perception (Prof. David Field), Fall 2016
- Psychology of Language (Prof. Morten Christiansen), Spring 2016
- Introduction to Biopsychology (Prof. Tim Devoogd), Fall 2015
- Computational Psychology (Prof. Shimon Edelman), Spring 2015
- Developmental Psychology (Prof. Michael Goldstein), Spring 2014

Course Design

Co-designed with another postgraduate student the full syllabus for *HD 6400—Emergent Collective Behavior*, offered by the Department of Human Development, Cornell University, Spring 2014

Selected Tutorials & Lab Sessions

Tutorial on data analysis in R, Centre for Lifelong Learning and Individualised Cognition Workshop, Sept. 2021

In charge of brain dissection wet lab and neuroanatomy tutorials for *PSYCH4250—Cognitive Neuroscience* (Prof. Barbara Finlay), Fall 2014 & Fall 2015, Cornell University

Awards and Funding

2017–2021 PhD Studentship, London School of Economics and Political Science

2016	Sage Fellowship, Cornell University
2013	Sage Fellowship, Cornell University
2013	BSc with Great Distinction (highest honours), University of Lethbridge
2012	Chinook Summer Research Award, University of Lethbridge

Languages

Japanese	mother tongue
English	native-equivalent

Residential Status

Permanent Resident of Singapore
Citizen of Japan