MATTHEW SLOCOMBE

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EDUCATION

PhD Psychology, Birkbeck College, University of London, 2016-present (submitting March 2021).
Supervisors: Professor Michael S. C. Thomas and Professor Andrew Tolmie
Topic: Analogical reasoning in development and learning

PGDip Social Science Research Methods, UCL Institute of Education, 2016.

PGDip Child Development, UCL Institute of Education, 2016.

Graduate Certificate in Psychology, UCL Institute of Education, 2014.

PGCE Design and Technology Education, Sheffield Hallam University, 2009.

BA Furniture Design and Related Products, Sheffield Hallam University, 2007.

RESEARCH INTERESTS

PhD research: The role of conceptual development and cognitive control in children's analogical reasoning; the role of priming in 'on-the-fly' analogical reasoning; the use of analogy in teaching and learning concepts. **Broader interests**: Analogy and analogical reasoning as mechanisms of cognitive development; language and conceptual development; language as mechanism of cognitive development, constructivist accounts of cognitive development; translation of cognitive science into applied domains.

RESEARCH EXPERIENCE

Graduate Student, Department of Psychological Sciences, Birkbeck College, University of London, 2016-present.

AWARDS & SCHOLARSHIPS

Scholarship for the 25th International Summer School in Cognitive Science. Cognitive Science Society, 2018.

Poster prize winner. British Psychological Society Developmental Section Annual Conference, 2018.

PhD Studentship. Tuition fees and full-time stipend, Economic and Social Research Council, 2016.

PUBLICATIONS

In Preparation

Slocombe, M., Thomas, M. S. C., & Tolmie, A. What causes change in children's development of analogical reasoning? Insights from a cross-sectional trajectory analysis.

> *This paper presents a new complimentary approach to understanding the developmental processes involved in the emergence of analogical reasoning. The reported study used a cross-sectional trajectory analysis paradigm to characterise developmental change in children's analogical reasoning abilities. We then regression models to build developmental relationships between change in 'low-level' semantic memory and cognitive control processes and change in 'high-level' analogical reasoning ability.*

Slocombe, M. & Thomas, M. S. C. Towards a Constructivist Account of the Development of Analogical Reasoning.

> *In this paper, we theorise the development of analogical reasoning though the lens of constructivist principles. We propose that explicit structure-mapping processes for analogical reasoning emerge ontogenetically via the development of a natural language system within the conceptual system. We argue that the development of language affords symbolic and syntactic control over a conceptual system that initially evolved phylogenetically for the high-level perception/recognition of abstract relations.*

Slocombe, M. Learning about the Earth from a scotch egg: How the mind learns with analogies and how they can be used in the classroom.

> *This paper presents a model of conceptual change for schoolteachers based on analogical learning principles. The paper describes a model of the conceptual system, several analogical processes involved in forming concepts and transfer, and classroom teaching methods based on analogical learning processes.*

Blogs and Press

Slocombe, M., & Bell, D. (2020). Closing the gap between science and practice in education: From metaphorical bridges to concrete common ground. *Learnus*. July 2020. Available here.

Turvey, K., Frederick, K., Watson, A., Slocombe, M., Harrison, C., Ellis, V., Kutnick, P., & Cowley, S. (2019). Total Recall? The ITE content framework, research and teachers' understandings of learning. *British Education Research Association*. December 2019. Available here.

Ellis, V., Turvey, K., Watson, A., Slocombe, M., & Kutnick, P. (2019). New teachers caught in an ideological trap. *The Guardian*. December 2019. Available here.

TALKS & PRESENTATIONS

Invited Talks

"Analogies in the mind and in the classroom: Translating basic cognitive science into science education practice", Child Development and Learning Centre, University of Oxford, 2020.

"The balance between conceptual and inhibitory systems in children's analogical reasoning", The Seed Lab, University of St Andrews, 2019.

"Learning about the Earth from a scotch egg: How children learn with analogies and how to teach with them effectively", International Primary Science Education Conference, Edinburgh, 2019.

"Conceptual strength as a developmental constraint in children's analogical reasoning", Centre for Cognitive Science, New Bulgarian University, 2018.

"Grounding development: Constructing a conceptual system from sensorimotor representations", Cognition, Genes and Developmental Variability Lab, University College London, 2018.

Conference Talks

Slocombe, M., Thomas, M. S. C., & Tolmie, A. (2019). *How does the strength of children's concepts affect their reasoning decisions?* The 19th European Conference on Developmental Psychology. Athens. Abstract available here.

Slocombe, M., Thomas, M. S. C., & Tolmie, A. (2018). *Towards a grounded cognition account of conceptual development.* The British Psychological Society Developmental Psychology Annual Conference. Liverpool. Abstract available here.

Slocombe, M., Thomas, M. S. C., & Tolmie, A. (2018). *The role of words in a developing grounded conceptual system.* The 11th Embodied & Situated Language Processing Conference. Lancaster. Abstract available here.

Conference Posters

Slocombe, M., Thomas, M. S. C., & Tolmie, A. (2019). *The balance between conceptual strength and semantic inhibition in children's analogical reasoning.* The Experimental Psychology Society Meeting. Bournemouth. Poster available here.

Slocombe, M., Thomas, M. S. C., & Tolmie, A. (2018). *The role of conceptual development in children's analogical reasoning.* The British Psychological Society Developmental Psychology Annual Conference. Liverpool. Poster available here.

Slocombe, M., Thomas, M. S. C., & Tolmie, A. (2017). *How do the salience and strength of existing relational concepts impact analogical reasoning ability in children?* The 4th International Conference on Analogical Reasoning. Paris. Poster available here.

Departmental Talks

"Cross-cultural differences in analogical reasoning development", Developmental Neurocognition Lab, Birkbeck, University of London. Forthcoming in 2020.

"Analogies in the mind and in the classroom: Translating basic cognitive science into science education practice", Centre for Educational Neuroscience, Birkbeck, University of London, 2019.

"Cognitive workshops made from conceptual tools", Developmental Neurocognition Lab, Birkbeck, University of London. 2018.

"Knowing versus seeing: Misconceptions in children's analogical reasoning", Centre for Educational Neuroscience, Birkbeck, University of London. London. 2018.

"How can grounded cognition inform a developmental account of analogical reasoning?", Developmental Neurocognition Lab, Birkbeck, University of London. 2018.

"Relational structure, analogy, and categorisation", Developmental Neurocognition Lab, Birkbeck, University of London. 2017.

SYMPOSIA AND PANELS ORGANISED

Ellefson, M. R., Astle, D., & Slocombe, M. (2020). *What do teachers need to know about the science of learning?* Convened forthcoming panel discussion at the Centre for Innovation in Teacher Education and Development, King's College London. Forthcoming - currently postponed due to COVID-19 outbreak.

Mutafchieva, M., Thibaut, J-P., & Slocombe, M. (2019) *New insights in the development of analogical reasoning.* Convened and chaired at the19th European Conference on Developmental Psychology, Athens.

ORGANISATION

Analogy List Development and Administration. Development and administration of a global academic network for research on analogical processes in cognition and learning (sites.google.com/site/analogylist). Founded in April 2019 as a mailing list, the network now hosts a research repository and a weekly online seminar series. Membership has now grown to over 300 researchers from a broad range of scientific disciplines. 2019-present.

Learnus Projects. Learnus is a thinktank involved in developing projects that facilitate dialogue and collaboration between cognitive scientists and education professionals. I am involved in the ongoing development of several projects including building a program that trains cognitive scientists to deliver professional development presentations to teachers and the development of the Learnus Blog. 2019-present.

Centre for Educational Neuroscience Seminar, University of London. Communications, mailing list management and ad-hoc convening and chairing of weekly online research seminars. 2018-present.

Bright Sparks Research Coordinator. Bright Sparks was a research and education event at the Centre for Educational Neuroscience involving 150 child participants over three days. My involvement included the co-development of running procedures, policies, parental information/consent documents, the coordination of a joint research ethics submission for eight different researchers, and the scheduling and oversite eight associated data collections. 2017.

PROFESSIONAL ACTIVITIES

Council member at Learnus, an education thinktank involved in the translation of cognitive science research into education practice and policy. 2019-present.

Ad hoc reviewing for the British Journal of Developmental Psychology, PLOS ONE, and Impact: The Journal of the Charted College of Teaching. 2018-present.

OUTREACH

"Analogical reasoning in the classroom" cognitive science talk for teachers on the role of analogies in learning, Greenford High School, London, 2019.

"Amazing brains!" cognitive science talk for primary school children, Trinity Primary School, London, 2019.

"Telepathic animals: How we use language to transfer thoughts between our minds" cognitive science talk for psychology students, Chigwell School, Essex, 2018.

Science advisor for the Learning Zone, an online platform for discussion between teachers and researchers on the science of learning, Wellcome Trust, 2017.

Bright Sparks organiser and presenter. Cognitive science research and education event for primary school children, Centre for Educational Neuroscience, Birkbeck, University of London, 2017.

PROFESSIONAL MEMBERSHIP

Cognitive Science Society

Cognitive Development Society

European Association of Developmental Psychology

Charted College of Teaching (professional affiliate)