

DR MAXWELL J ROBERTS

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LECTURER

PSYCHOLOGY | INFORMATION DESIGN | CARTOGRAPHY

[Max's research] "is about the very essence of graphic design, expressed as the interaction between information and visual discipline. It will have significant impact in the teaching of design in the new digital era, where more articulate design fundamentals could provide better results"

Massimo Vignelli (1931-2014), World Renowned Designer

Thought leader, subject matter expert and international authority on schematic map design; influences worldwide methodology and drives innovation and change in visual communication. Published author, researcher, designer and multidisciplinary lecturer who uniquely combines Psychology with Information Design, Cartography, Computer Science and Art.

- **Champions evidence-based design;** Uses psychological findings and theories to identify principles for effective visual communication. Uses empirical studies, psychometric testing and statistical analysis, to validate these.
- **Spearheads ground-breaking research;** Research methodology combines the use of, and systematic exploration of, innovative design techniques, objective usability testing and user experience evaluation.
- **Engages passionately with end-users;** raises awareness of new developments to academic researchers, practitioners, and the general public via a variety of communication methods.
- **Innovative multidisciplinary teaching;** research findings feed directly into modules and course content for undergraduate, postgraduate and doctoral students. Consistently achieves excellence in academic teaching and research project supervision.

AREAS OF EXPERTISE (RESEARCH AND TEACHING)

Cognitive Science	Page Layout & Book Design	Wayfinding
Human Intelligence	Visual Communication	Problem Solving
Psychometric Testing	Schematic Mapping	Human Reasoning
Research Methods & Statistics	Type & Typography	Animal & Machine Intelligence
Human Factors & Usability Testing	History of Design	Individual Differences in Cognition

ACADEMIC, RESEARCH AND INDUSTRY EXPERIENCE

UNIVERSITY OF ESSEX 1993 - PRESENT

Department of Psychology - www.essex.ac.uk/psychology/staff/mjr

LECTURER/RESEARCHER: COGNITIVE PSYCHOLOGY, 1993 - PRESENT

Fifth member of new department founded in 1991 and now a world class teaching and research centre with a faculty of 45 and state of the art Centre for Brain Science. Lectures to a continually growing undergraduate cohort, from 45 to 250 per year currently. Known by co-workers for attention to detail and consistency of application of procedures.

- **Creates and delivers course content, coordinates module development;** lectures core/elective topics to undergraduate students on human, animal and machine intelligence, emphasising cross-disciplinary issues, supervises student research projects on these topics.
- **Successful supervision of three PhD students;** individual differences in reasoning strategies, effects of social context on reasoning, and reading & dyslexia remediation.
- **Google H-Index of 19, furthers research into human intelligence, psychometric testing, problem-solving, reasoning, inference and decision making;** authored/co-authored books, articles in peer reviewed journals and presented findings as an invited speaker at conferences and workshops.
- **Internal examiner and assessor;** departmental examinations co-ordinator since 1995, internal examiner for PhD thesis, assessment panel for Colchester Institute MA art degrees validated by University of Essex.
- **External examiner and assessor;** for University College London (HCS dept BSc degree schemes) and MPhil/PhD examiner for universities of Cambridge, Plymouth, Ghent (Belgium) and New South Wales (Australia). Assessment panel member for a Belgian Government-funded IAP research network (2000).

LECTURER/RESEARCHER: TRANSIT MAP DESIGN, 2007 – PRESENT

Develops innovative multidisciplinary approaches to transit map design/assessment with wider implications for visual information design and usability testing in general. Combines psychology and design expertise to create maps with reduced cognitive load for journey planning, with evidence provided for their improved usability.

- **Pioneers research into alternative design methodologies and improving customer experience.** Redesigned London Underground and Paris Metro maps to validate usability theories. Conducted psychological tests and public studies to generate assessment data; demonstrated that novel designs are easier to use.
- **Wrote full course content for a unique elective module based on research findings.** *Transit Maps: Past Present and Future* delivers design context, map history, psychological theories, usability testing and design techniques to third-year undergraduates. Devised and implemented innovative hands-on assessments.
- **Gained rapid international recognition.** Widespread dissemination of research, designs and ideas via books, peer reviewed articles, keynote speeches, seminars, conferences, workshops, public engagements, personal and joint-venture exhibitions, media engagement, web pages, monthly newsletter and social media. Presented and explained map design concepts on BBC, ITN and Monocle as well as USA and Canadian radio channels. Features frequently in German and Taiwanese media and leading Art, Design and Cartography journals.
- **Demonstrable worldwide impact.** Top four design publications cited over 120 times; influenced and positively impacted visual design around the world, for example clear evidence of curved transit maps being implemented or other design principles being applied in UK and Germany, and university research programs influenced in Germany and The Netherlands. Currently investigating development of computer software to automatically generate new map designs. On track to deliver four high-quality REF publications for 2020 submission.
- **Invited as a guest lecturer and assessor to review transit maps.** Designs from students at Parson's New York School of Art & Design, USA and South Essex College, UK.
- **Co-planned, organised and chaired a two-day international workshop and exhibition.** Disseminated research findings, theories and practical applications to academics and practitioners. Sponsored by the British Cartographic Society.

CONSULTANCY/CONTRACT RESEARCH, 2007 – PRESENT

Created *Tube Map Central* (www.tubemapcentral.com) to develop commercial activities, broaden public knowledge on design developments and generate funding for consultancy. Collaborated with a wide range of industry, public and academic partners to disseminate design concepts, evidence-based benefits and real-world applications.

- **Advised and supported Karlsruhe Transport Authority (KVV) to implement "curvilinear maps" across their transport network.** Tutored in-house cartographer in design principles and gave presentation to staff to explain effective transit map design and delivery benefits (2014 – 2016).
- **Contracted by FWT Studios, a major UK designer of public transport information (2011).** Implemented a large-scale study into the usability of prototype route diagrams for the Docklands Light Railway. Research findings and conclusions presented to TfL; recommended designs adopted for DLR trains and stations.
- **Engaged by FWT to detail the importance of psychological concepts for schematic map design and wayfinding information (2007).** Importance of cognitive load and intelligence highlighted in submitted technical report. Implications accepted by FWT: The effect of cognitive load on usability is now referred to on CHK USA (sister company) website publicity highlighting their approach to information design.

EDUCATION | SCHOLARSHIPS | TRAINING

Honorary Lecturer, University of Kent School of Computing, 2016

Information Design Summer School, Simplification Centre, 2015

PhD, Psychology, University of Nottingham, 1992

Awarded Gertrude Cropper Scholarship for Excellence in Research, University of Nottingham, 1990

Awarded EPS Study Visit Grant. Age & Cognitive Performance Centre, University of Manchester, 1990

BPS Level A Psychometric Test Administration, Saville & Holdsworth Ltd, 1989

BSc Psychology (1st Class Hons), University of Nottingham, 1988

MEMBERSHIPS | EDITORIAL POSITIONS

Member of Sign Design Society, 2010 – Present

Associate Editor – European Journal of Cognitive Psychology, 2009 – 2011

Editorial Board & Peer Reviewer – European Journal of Cognitive Psychology, 2005 – 2008

Associate Editor – British Journal of Psychology, 2001 – 2006

ACADEMIC PUBLICATIONS (REFEREED JOURNALS)

- 2017 **Roberts, M.J.**, Gray, H., & Lesnik, J. Preference versus performance: Investigating the dissociation between objective measures and subjective ratings of usability for schematic metro maps and intuitive theories of design. *International Journal of Human Computer Studies*, 98, 109-128.
- 2016 **Roberts, M.J.**, Newton, E.J., & Canals, M. Radi(c)al departures: Comparing conventional octolinear versus concentric circles schematic maps for the Berlin U-Bahn/S-Bahn networks using objective and subjective measures of effectiveness. *Information Design Journal*, 22, 92-115.
- Roberts, M.J.**, & Rose, D. Map-induced journey-planning biases for a simple network: A Docklands Light Railway study. *Transportation Research A*, 94, 446-460.
- 2013 **Roberts, M.J.**, Newton, E.J., Lagattolla, F.D., Hughes, S., & Hasler, M.C. Objective versus subjective measures of Paris Metro map usability: Investigating traditional octolinear versus all-curves schematic maps. *International Journal of Human Computer Studies*, 71, 363-386.
- 2012 Newton, E.J., **Roberts, M.J.**, & Donlan, C.S. The effects of presentation and content on syllogistic reasoning by children with and without specific language impairment. *Journal of Cognitive Psychology*, 24, 802-814.
- Perez-Salas, C.P., Streiner, D.L., & **Roberts, M.J.** A comparison between element salience versus context as item difficulty factors in Raven's Matrices. *Intelligence*, 40, 325-332.
- 2011 **Roberts, M.J.**, & Newton, E.J. Rapid-response versus free-time selection tasks using different logical connectives. *Journal of Cognitive Psychology*, 23, 858-872.
- 2010 Newton, E.J., **Roberts, M.J.**, & Donlan, C.S. Deductive reasoning in children with specific language impairment. *British Journal of Developmental Psychology*, 28, 71-87.
- 2007 **Roberts, M.J.**, Taylor, R.J., & Newton, E.J. Explaining inappropriate strategy selection in a simple reasoning task. *British Journal of Psychology*, 98, 627-644.
- Meo, M., **Roberts, M.J.**, & Marucci, F.S. Element salience as a predictor of item difficulty for Raven's Progressive Matrices. *Intelligence*, 35, 359-368.
- 2005 **Roberts, M.J.** Expanding the universe of categorical syllogisms: A challenge for reasoning researchers. *Behavior Research Methods, Instruments, & Computers*, 37, 560-580.
- Roberts, M.J.**, & Sykes, E.D.A. Categorical reasoning from multiple diagrams. *Quarterly Journal of Experimental Psychology*, 58A, 333-376.
- 2004 Hayes, M., Masterson, J., & **Roberts, M.J.** Improvement in reading speed in an adult with developmental dyslexia of the 'mixed' type. *Neuropsychological Rehabilitation*, 14, 365-382.
- 2003 **Roberts, M.J.**, & Sykes, E.D.A. Belief bias and relational inference. *Quarterly Journal of Experimental Psychology*, 56A, 131-154.
- 2002 **Roberts, M.J.** The elusive matching bias effect in the disjunctive selection task. *Experimental Psychology*, 49, 89-97.
- Roberts, M.J.** The relationship between extraversion and ability. *Personality and Individual Differences*, 32, 517-522.
- 2001 **Roberts, M.J.**, & Newton, E.J. Inspection times, the 'change' task and the 'rapid response' selection task. *Quarterly Journal of Experimental Psychology*, 54A, 1031-1048.
- Roberts, M.J.**, & Roberson, D. Predicting strategy usage for the compass point directions task: Spatial ability versus verbal ability across the lifespan. *Cahiers de Psychologie Cognitive/Current Psychology of Cognition*, 20, 3-18.
- Ward, G., **Roberts, M.J.**, & Phillips, L.H. Task switching costs, Stroop costs and executive control: A correlational study. *Quarterly Journal of Experimental Psychology*, 54A, 491-511.
- Roberts, M.J.**, Newstead, S.E., & Griggs, R.A. Quantifier interpretation and syllogistic reasoning. *Thinking and Reasoning*, 7, 173-204.
- Roberts, M.J.**, & Newton, E.J. Understanding strategy selection. *International Journal of Human-Computer Studies*, 54, 137-154.
- 2000 **Roberts, M.J.**, Welfare, H., Livermore, D.P., & Theadom, A.M. (2000). Context, visual salience, and inductive reasoning. *Thinking and Reasoning*, 6, 349-374.
- Newton, E.J., & **Roberts, M.J.** An experimental study of strategy development. *Memory and Cognition*, 28, 565-573.
- Roberts, M.J.** Strategies in relational inference. *Thinking and Reasoning*, 6, 1-26.

ACADEMIC PUBLICATIONS (REFEREED JOURNALS, CONTINUED)

- 1999 **Roberts, M.J., & Seager, P.B.** Predicting belief in paranormal phenomena: A comparison of conditional and probabilistic reasoning. *Applied Cognitive Psychology*, 13, 443-450.
- 1998 **Roberts, M.J.** Inspection times and the selection task: Are they relevant? *Quarterly Journal of Experimental Psychology*, 51A, 781-810.
Roberts, M.J. How should relevance be defined? What does inspection time measure? A reply to Evans. *Quarterly Journal of Experimental Psychology*, 51A, 815-817.
- 1997 **Roberts, M.J., Gilmore, D.J., & Wood, D.J.** Individual differences and strategy selection in reasoning. *British Journal of Psychology*, 88, 473-492.
- 1996 **Roberts, M.J.** Putting context into context: A rejoinder to Richardson. *British Journal of Educational Psychology*, 66, 539-542.
Roberts, M.J., & Stevenson, N.J. Reasoning with Raven—with and without help. *British Journal of Educational Psychology*, 66, 519-532.
- 1994 **Roberts, M.J., Wood, D.J., & Gilmore, D.J.** The sentence-picture verification task: Methodological and theoretical difficulties. *British Journal of Psychology*, 85, 413-432.
- 1993 **Roberts, M.J.** Human reasoning: Deduction rules or mental models, or both? *Quarterly Journal of Experimental Psychology*, 46A, 569-589.
Roberts, M.J., & Erdos, G. Strategy selection & metacognition. *Educational Psychology*, 13, 259-266.
- 1988 Underwood, G., **Roberts, M.J.**, & Thomason, H. Strategical invariance in lexical access: The reappearance of the pseudohomophone effect. *Canadian Journal of Psychology*, 42, 24-34.
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OTHER PUBLICATIONS

- 2017 **Roberts, M.J.** From reasoning and intelligence research to information design: Understanding and optimising the usability and acceptability of schematic transit maps. In N.D. Galbraith, E. Lucas & D. Over (eds.), *The thinking mind: A festschrift for Ken Manktelow* (pp. 178-190). Hove, UK: Psychology Press.
- 2012 **Roberts, M.J.** *Underground maps unravelled*. Wivenhoe, Essex: Published by the author.
- 2007 **Roberts, M.J.** (Ed.). *Integrating the mind*. Hove: Psychology Press.
Roberts, M.J. Contextual facilitation methodology as a means of investigating domain-specific cognition. In M.J. Roberts (Ed.), *Integrating the mind* (pp. 13-37). Hove: Psychology Press.
Roberts, M.J. Do problem solvers need to be intelligent? In M.J. Roberts (Ed.), *Integrating the mind* (pp. 329-350). Hove: Psychology Press.
- 2006 **Roberts, M.J.** Falsification and mental models: It depends on the task. In W. Schaeken, A. Vandierendonck, W. Schroyens, & G. d'Ydewalle (Eds.), *The mental models theory of reasoning: Refinements and extensions* (pp. 85-113). Mahwah, NJ: Lawrence Erlbaum.
- 2005 **Roberts, M.J.** *Underground maps after Beck*. Harrow Weald: Capital Transport Publishing.
Roberts, M.J., & Newton, E.J. (Eds.) *Methods of thought: Individual differences in reasoning strategies*. Hove: Psychology Press.
Roberts, M.J., & Newton, E.J. Strategy usage in a simple reasoning task: Overview and implications. In M.J. Roberts & E.J. Newton (Eds.), *Methods of thought: Individual differences in reasoning strategies* (pp. 129-158). Hove: Psychology Press.
Newton, E.J., & **Roberts, M.J.** The window of opportunity: A model for strategy discovery. In M.J. Roberts & E.J. Newton (Eds.), *Methods of thought: Individual differences in reasoning strategies* (pp. 159-186). Hove: Psychology Press.
- 2004 **Roberts, M.J.** Heuristics and reasoning: Making deduction simple. In J.P. Leighton & R.J. Sternberg (Eds.), *The nature of reasoning* (pp. 234-272) Cambridge: CUP.
- 2003 **Roberts, M.J., & Newton, E.J.** Individual differences in the development of reasoning strategies. In D. Hardman & L. Macci (Eds.), *Thinking: International perspectives on reasoning, judgment, and decision making* (pp. 23-43). Chichester: John Wiley.
- 2000 **Roberts, M.J.** Individual differences in reasoning strategies: A problem to solve or an opportunity to seize? In W. Schaeken, G. De Vooght, A. Vandierendonck, & G. d'Ydewalle (Eds.), *Deductive reasoning and strategies* (pp. 23-48). Mahwah, NJ: Lawrence Erlbaum.
- 1999 **Roberts, M.J., & Russo, R.** *A student's guide to Analysis of Variance*. London: Routledge.

INVITED KEYNOTE SPEECHES AND SEMINARS

- 2017 **Around in circles and back again: simplicity, coherence, and the need for evidence-based design.** Faculteit Wiskunde en Informatica, Technische Universiteit Eindhoven, The Netherlands, April. [Departmental seminar]
Step by step in London and Berlin: understanding network structure by exploring linearity. Fakultät für Gestaltung, Hochschule Mannheim, Germany, April. [Departmental seminar]
Step by step in London and Berlin: understanding network structure by exploring linearity. Department of Geodesy and Geoinformation, TU Wien, Austria, April. [Departmental seminar]
Step by step in London and Berlin: understanding network structure by exploring linearity. Fakultät Gestaltung, Hochschule für angewandte Wissenschaften Würzburg-Schweinfurt, Germany, April. [Departmental seminar]
- 2016 **Step by step in London and Berlin: understanding network structure by exploring linearity.** Fakultät für Informatik, Karlsruher Institut für Technologie, Germany, April. [Departmental seminar]
- 2013 **Underground maps in orbit.** University College London GeoMob, October. [Departmental seminar]
Do we need curvilinear metro maps? Schloss Dagstuhl, Wadern, Germany, April. [Seminar position paper]
- 2012 **Towards a set of criteria for the design of effective schematic network maps.** Society of Cartographers, London, November. [Invited conference paper]
Transport schematics: usability, aesthetics, and evaluation. School of GeoSciences, University of Edinburgh, October. [Departmental seminar]
Transport schematics: usability, aesthetics, and evaluation. Diagrams 2012, Canterbury, UK, July. [Conference keynote address]
Step by step in London and Berlin: Investigating schematic map usability by exploring linearity. British Cartographic Society, Basingstoke, UK, June. [Invited conference paper]
- 2011 **Metro map schematics: Misunderstood by designers and difficult to use worldwide.** British Cartographic Society GIS special interest group, London, November. [Invited workshop paper]
Underground maps: Design challenges and challenging designs. Department of Psychology, University of Kingston, February. [Departmental seminar]
- 2010 **The London Underground map: Design challenges and challenging designs.** Schloss Dagstuhl, Wadern, Germany, November. [Seminar position paper]
The London Underground map: Design challenges and challenging designs. Department of Psychology, University of Lancaster, March. [Departmental seminar]
- 2009 **Cognitive capacity and reasoning: Implications for metro map design.** Department of Psychology, University of Derby, March. [Departmental seminar]
- 2006 **Testing surface theories of reasoning using an expanded set of categorical syllogisms.** Department of Psychology, University of Rome, October. [Departmental seminar]
Understanding intelligence by understanding intelligence test items. Department of Psychology, University of Rome, October. [Departmental seminar]
- 2005 **Progress in identifying the cognitive fundamentals of intelligence.** CHC workshop on thought and language. University College London, November. [Seminar position paper]
- 2002 **Inferences from diagrams: A challenge to the working memory hypothesis in reasoning research.** Department of Psychology, Brunel University, February. [Departmental seminar]
- 2001 **Inferences from diagrams: A challenge to the working memory hypothesis in reasoning research.** Department of Psychology, University of Ghent, Belgium, November. [Departmental seminar]
Strategy selection in a simple reasoning task: Overview and implications. Department of Psychology, University of Cardiff, October. [Departmental seminar]
Falsification and mental models: It depends on the task. Workshop: The mental models theory of reasoning: Refinements and extensions, Brussels, March. [Seminar position paper]
- 2000 **Belief Bias in Relational Reasoning.** Department of Psychology, University of Plymouth, June. [Departmental seminar]
- 1999 **What do inspection times really tell us about the selection task?** Department of Psychology, University of Derby, November. [Departmental seminar]
The window of opportunity for strategy development. Department of Psychology, University of Leuven, Belgium, September. [Departmental seminar]
Strategies in deductive reasoning. Department of Psychology, Brunel University, May. [Departmental seminar]
- 1998 **What can inspection times tell us about the Wason selection task?** Department of Psychology, University of Aberdeen, November. [Departmental seminar]
Individual differences and strategy selection in reasoning. Centre for Cognitive Science, University of Edinburgh, April. [Departmental seminar]

INVITED KEYNOTE SPEECHES AND SEMINARS (CONTINUED)

- 1998 Individual differences in reasoning strategies: A problem to solve or an opportunity to seize? Workshop: Deductive reasoning and strategies, Brussels, March. [Seminar position paper]
- 1996 Cognitive psychology and intelligence: Elimination or illumination? Department of Psychology, University of Plymouth, December. [Departmental seminar]
- 1993 Individual differences and strategy selection in problem solving. Department of Psychology, University of Aberdeen, March. [Departmental seminar]
- 1990 Individual differences and strategy selection in problem solving. Age & Cognitive Performance Research Centre, University of Manchester, November. [Departmental seminar]

CONFERENCE AND WORKSHOP PAPERS

- 2017 Roberts, M.J. Digitising schematic maps: Recreating or reinventing history? *Second International Workshop on Exploring Old Maps (EOM 2017)*, Universität Würzburg, April. [Refereed]
- 2016 Roberts, M.J., & Vaeng, I.C.N. (2016). Expectations and prejudices usurp judgements of schematic map effectiveness. In: P. Lloyd & E. Bohemia (eds.), *Proceedings of DRS2016: Design + Research + Society — Future-Focused Thinking, Volume 8*, pp 2343-2359, DOI 10.21606/drs.2016.123. [Refereed]
- 2015 Roberts, M.J., Newton, E.J., Gray, H., Lesnik, J., & Canals, M. (2015). Preference is not performance: Objective versus subjective measures of Berlin schematic map usability. *IIID Vision Plus 2015*, Birmingham, September. [Poster]
- 2014 Roberts, M.J. Selection tasks, syllogisms, and schematic maps: Understanding human cognition (more) by expanding traditional paradigms. *Reasoning, Cognition and Life: A conference in honour of Professor Ken Manktelow*. Wolverhampton, May.
- Roberts, M.J. What's your theory of effective schematic map design? *First International Schematic Mapping Workshop*, University of Essex, April. [Workshop]
- Roberts, M.J. Schematic maps in the laboratory. *First International Schematic Mapping Workshop*, University of Essex, April. [Workshop]
- 2013 Fink, M., Haverkort, H., Nöllenburg, M., Roberts, M.J., Schuhmann, J., & Wolff, A. Drawing metro maps using Bézier curves. In W. Didmo & M. Patrignani (eds.), *Graph Drawing 2012, Lecture Notes in Computer Science, 7704*, 463-474. [Refereed]
- 2011 Roberts, M.J. Using a time-deadline journey planning methodology to compare the official Paris Metro map with a rule-breaking alternative. *International Cartographic Association Commission on Use and User Issues workshop*, Paris, July. [Workshop]
- 2008 Roberts, M. J., Newton, E. J., & Lagattolla, F.D. Cognitive capacity and reasoning: Implications for metro map design. *BPS Cognitive Psychology Section 6th International Conference on Thinking*, Venice, August.
- 2006 Roberts, M. J. Task format, belief bias and relational reasoning. *BPS Cognitive Psychology Section 23rd Annual Conference*, Lancaster, September.
- Roberts, M. J. Testing surface theories of reasoning using an extended set of categorical syllogisms. *BPS Cognitive Psychology Section 23rd Annual Conference*, Lancaster, September.
- 2005 Meo, M., Roberts, M.J., & Marucci, F.S. Salience as a Predictor of Item Difficulty for Raven's Progressive Matrices. *ESCOPE 14th Bi-Annual Meeting*, Leiden, September. [Poster]
- 2004 Roberts, M.J., & Newton, E.J. Strategy usage in a simple reasoning task: Overview and implications. *BPS Cognitive Psychology Section 5th International Conference on Thinking*, Leuven, July.
- Newton, E.J., & Roberts, M.J. The window of opportunity: A model for strategy discovery. *BPS Cognitive Psychology Section 5th International Conference on Thinking*, Leuven, July.
- 2001 Roberts, M.J. Strategies in deductive reasoning. *BPS Centenary Annual Conference*, Glasgow, March.
- Roberts, M.J. Context, visual salience, and inductive reasoning. *BPS Centenary Annual Conference*, Glasgow, March.
- 1999 Roberts, M.J. Strategies in relational inference. *ESCOPE 11th Bi-Annual Meeting*, Ghent, September.
- 1998 Roberts, M.J. Inspection times and the selection task: Are they relevant? *EPS meeting*, Cambridge, April.
- 1992 Roberts, M.J., & Erdos, G. Strategy selection and metacognition. *BPS Cognitive Psychology Section 2nd International Conference on Thinking*, Plymouth, July.
- Roberts, M.J. Human reasoning: Deduction rules or mental models, or both? *BPS Cognitive Psychology Section 9th Annual Conference*, Leicester, September.

PRESENTATIONS AND PRACTITIONER/PUBLIC ENGAGEMENTS

- 2017 **London's secret railways: Mapping the Underground's rivals.** TfL internal presentation, London, August.
Transit maps: the good, the bad & the ugly. University of the Third Age Hillingdon branch, Ruislip, January.
- 2016 **Tube map challenge.** Late Debate, London Transport Museum, London, July 2016. A hands-on interactive session in which a discussion about the challenges facing today's map designers was followed by an invitation to attendees to experiment with their own designs of underground maps. Co-hosted with Geoff Marshall.
Round in circles and back again: simplicity, coherence, and the need for evidence-based design. Typo Berlin, Berlin, May.
Cartography meets psychology: the case for curvilinear network maps. KVV, Karlsruhe, April.
- 2015 **Tube map: past, present, & future.** TfL internal presentation, London, August.
Underground maps invigorated: digitising design; recreating or reinventing history. London Underground Railway Society, London, June.
New directions in schematic mapping. Brussels Academy, StadsSalonsUrbains, Beursschouwburg, Brussels, February.
- 2014 **Transit maps: the good, the bad and the ugly.** Permanent Way Institution, London, December.
My journey in Underground maps. London Illustrators Fair, London, June.
- 2013 **Information provision not information pollution on transport maps.** Mainstreaming SmarterTravel: Local Sustainable Transport Fund National Conference, Manchester, December.
Concentric circle maps: simplicity versus coherence? Sign Design Society, November.
My journey in maps. theTeam, London, March.
The London Underground map: past, present & future. Victoria & Albert Museum, London, November.
My journey in Underground maps. Design Museum, London, October.
Underground maps uncharted: A parallel universe of unofficial designs. Abingdon and District National Trust Association, Abingdon, October.
Underground maps unravelled. TEDx Sussex University, Brighton, March.
Underground maps unravelled. Design Museum, London, February.
- 2012 **London's secret railways: Mapping the Underground's rivals.** London Underground Railway Society, London, November.
Underground maps unravelled. Café Scientifique, Colchester, October.
What makes a good map and why? London Transport Museum, London, June.
- 2011 **DLR map usability study report.** Docklands Light Railway, London, December.
Underground maps: design challenges and challenging designs. Ignite London 4, London, February.
- 2010 **Underground maps: design challenges and challenging designs.** Crossrail, London, November.
The London Underground map: design challenges & challenging designs. FWT Studios, London, October.
The London Underground map: design challenges and challenging designs. Personal presentation to the Commissioner for Transport for London, London, August.
Underground maps after beck. Subterranea Britannica, High Wycombe, October.
The London Underground map: design challenges and challenging designs. London Underground Railway Society, London, June.
Underground maps: design challenges and challenging designs. Essex Book Festival, Colchester, March.
- 2009 **The London Underground map: design challenges & challenging designs.** Sign Design Society, London, June.
A (brief) history of the London Underground map. University of the Third Age Epping Branch, Theydon Bois, November.
- 2006 **Underground maps after Beck.** London Underground Railway Society, London, July.
- 2005 **London Underground maps of the world.** London Transport Museum/Central St Martins College, London, November.
- 2001 **The London Underground map.** London Underground Railway Society, London, August.

EXHIBITIONS SHOWCASING MY DESIGNS

- 2016 **Infocenter U2/U5.** Wiener Linien, Vienna: Nov 8th, 2016–ongoing. [Part of a larger exhibition]
Purely decorative: the map is the reward. Sign Design Society, hosted at The Gallery, Alan Baxter & Associates, London: July 7th–14th.
- 2013 **Underground maps unleashed.** Off the Rails, Wivenhoe Station, Essex: Nov 11th to Jan 25th, 2014.
Bending reality: where arc and science meet. Schloss Dagstuhl, Wadern, Germany: April 8th–21st. [Part of a larger exhibition]
- 2012 **Underground maps unravelled.** The Gallery, Alan Baxter & Associates, London: July 27th– Aug 10th.
Underground maps unravelled. Studio 3 Gallery, University of Kent: July 3rd–27th.
Jenseits der Landschaft – Beyond the landscape. Schloss Dagstuhl, Wadern, Germany: June 26th, 2010–Sept 14th. [Part of a larger exhibition]
Mind the map: inspiring art, design and cartography. London Transport Museum, London: May 18th–Oct 28th. [Part of a larger exhibition]
- 2011 **Underground maps unravelled.** IEEE visWeek, Providence, RI, USA: Oct 23rd–28th.
- 2010 **Underground maps unravelled.** Schloss Dagstuhl, Wadern, Germany: Nov 14th–March 11th, 2011.
Underground maps unravelled. Scott Brownrigg, Covent Garden: Oct 7th–22nd 2010.
Underground maps unravelled. Minorities Gallery, Colchester: Sept 7th–24th 2010.
Underground maps unravelled. Gallery Space, South Essex College, Southend-on-Sea: Feb 26th–March 8th, 2010.
- 2009 **Time to consider.** London Transport Museum, London: April 22nd–May 8th, 2009. [Part of a larger exhibition]

THIRD PARTY BOOKS SHOWCASING MY DESIGNS

- 2016 Atkinson, S. *et al.* *Great city maps: A historical journey through maps, plans, and paintings.* London: Dorling Kindersley.
- 2015 Ovenden, M. *Transit maps of the world* (2nd Ed.). New York: Penguin Books.
[Also translated into Japanese and Spanish]
Ovenden, M., Pepinster, J., & Pontremoli, P. *L'histoire du Métro Parisien racontée par ses plans.* Paris: La Vie du Rail.
- 2013 Shaoqiang, W. *Infographics: Designing and Visualizing Data.* Barcelona: Promopress.
- 2012 Dobbin, C. *London Underground Maps: Art, Design, and Cartography.* London: Lund Humphries.
Lloyd, P.B. *Vignelli: Transit Maps.* Rochester, NY: RIT/Cary Graphics Press.
- 2011 Cassettari, S., Going, C., Cocks, F., & Jones, N. *London in Maps: A Changing Perspective.* Cambridge: GeoInformation Group.
Ovenden, M. *Great Railway Maps of the World.* New York: Particular Books.
- 2009 Ovenden, M. *Paris Underground: The Maps, Stations, and Design of the Metro.* New York: Penguin Books.
Sinclair, G. *Historic Maps and Views of London.* New York: Black Dog & Leventhal Publishers.
Sinclair, G. *Historic Maps and Views of Paris.* New York: Black Dog & Leventhal Publishers.
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