

DR MAXWELL J ROBERTS

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LECTURER

USER RESEARCH | INFORMATION DESIGN | PSYCHOLOGY

[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

Recognised international authority on schematic map design who drives innovation and change via a clear framework and evidence-based methodologies. Inspirational thought leader who has single-handedly influenced the field driving it to new levels of creativity. Multidisciplinary researcher, designer, lecturer, author and public speaker who uniquely combines psychology with user-research, information design, 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, 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.

AREAS OF EXPERTISE (RESEARCH AND TEACHING)

Cognitive Science
Human Intelligence
Psychometric Testing
History of Design
Wayfinding

Schematic Map Design
Animal & Machine Intelligence
Research Methods & Statistics
Visual Communication
Type & Typography

Human Factors & Usability Testing
Reasoning & Problem Solving
Individual Differences in Cognition
Information Design
Page Layout & Book Design

ACADEMIC, RESEARCH AND INDUSTRY EXPERIENCE

UNIVERSITY OF ESSEX

1993 – PRESENT

Department of Psychology (www.essex.ac.uk/people/rober72609/maxwell-roberts)

LECTURER | RESEARCHER: TRANSIT MAP DESIGN (2007 – PRESENT)

Leads groundbreaking multidisciplinary approaches to transit map design, usability testing and user evaluation, delivers positive impact for information design beyond transit maps. Combines psychology and design expertise to create maps with evidence-based reduced cognitive load for journey planning.

- **Wrote course content for a unique elective module: *Transit Maps: Past Present and Future*.** Based on research findings, this presents historical context, development of maps, psychological theories, usability testing and design techniques to third-year undergraduates. Implemented innovative and engaging hands-on assessments.
- **Invited as a guest lecturer and assessor at design schools.** Evaluated students' transit map designs from Parson's New York School of Art & Design (2011). Delivered self-contained modules on transit map design at South Essex College, UK (2010) and New Design University, St Pölten, Austria (2018).
- **Pioneers research into alternative design methodologies and improving customer experience.** Highlights importance of systematic methodology and set out a framework for effective design to facilitate generation of map prototypes and the evaluation of already-existing creations. Constructs research protocols to evaluate suitability of alternative map layouts.

- **Raises awareness of usability-driven map design;** widespread dissemination of research, designs and ideas via peer reviewed articles, books, conferences, keynote speeches, seminars, workshops, public engagements, exhibitions, web pages, newsletter and social media.
- **Co-plans, organises and chairs ongoing Schematic Mapping Workshop** (www.schematicmapping.org) – England 2014, Austria, 2019, Germany 2021. These disseminate research findings, theories and practical applications to academics and practitioners.
- **Gained rapid international recognition;** writes, edits and publishes books, newsletters and web articles. Regularly explains design concepts on BBC, ITN and Monocle as well as USA and Canadian radio channels, delivers keynote speeches at conferences and events across Europe. Features in American, European and Asian media and art, design and cartography books and journals. Has a massive internet presence.
- **Achieved demonstrable worldwide impact;** top four design publications cited over 240 times, clear evidence of design principle application – such as curvilinear and concentric circles map implementation in Germany – as well as inclusion in university research/teaching programmes in Germany, Austria and the Netherlands.

LECTURER | RESEARCHER: COGNITIVE PSYCHOLOGY (1993 – PRESENT)

Joined as the fifth member of a department newly founded in 1991; today a world-class teaching and research centre with a faculty of 60 and a state-of-the-art Centre for Brain Science. Lectures to a growing undergraduate cohort, 250 per year currently. Known for attention to detail and consistency of procedural application.

- **Creates and delivers course content, coordinates module development;** lectures core/elective topics to students, including statistics and human/animal/machine intelligence – emphasising cross-disciplinary issues.
- **Wrote course content for a multidisciplinary elective module: *Intelligent Behaviour*.** This integrates across human, machine and animal intelligence theories, identifying recurring themes and common ground, yielding insights facilitating understanding of contemporary issues such as animal sentience and the future of AI.
- **Experienced teacher of statistics and research methods;** career-wide involvement. Currently teaching Analysis of Variance to postgraduate students, using a classroom approach and structured exercises to reinforce single factor designs, use of follow-up tests, factorial designs, interaction and underlying principles.
- **Supervises undergraduate and PhD research projects** including individual differences in reasoning strategies, effects of social context on reasoning, and reading and dyslexia remediation.
- **Achieved a Google H-Index of 27 (Oct 2022);** promotes research into human intelligence, psychometric testing, problem solving, reasoning, inference and decision making: authored/co-authored books and articles in peer-reviewed journals, and presented findings as an invited speaker at conferences and workshops.
- **Internal examiner and assessor;** departmental examinations co-ordinator 1995-2020 (with breaks), internal examiner for departmental PhD theses, assessment panel for Colchester Institute MA art degrees validated by University of Essex, independent chair for University of Essex PhD examinations since 2020.
- **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).

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 partners to disseminate design concepts, evidence-based benefits and real-world applications.

- **Contracted by Aberfield on behalf of *first direct* bank (2020)** (in collaboration with TradePeers Ltd.) to design/interpret research and, from this, create a set of four transit map-style designs showing the financial events of different generations.
- **Collaboration with TradePeers Ltd. (2018)** to create a set of twelve regional *Brexit Maps* using the transit map metaphor to highlight Brexit issues in a clear engaging way for business in different sectors to plan ahead.
- **Advised Karlsruhe Transport Authority (KVV) (2014 - 2016)** on schematic/transit map design and tutored design rules, principles and options to in-house cartographer. Supported implementation of curvilinear maps across KVV transport network and explained effective design and delivery benefits in a presentation to staff.

- Contracted by FWT Studios, a major UK designer of public transport information (2011) to design and implemented a large-scale usability study of prototype route diagrams for Transport for London (Docklands Light Railway). Presented findings and achieved adoption of recommended designs.
- Engaged by FWT Studios (2007) to detail and explain the importance of psychological concepts such as cognitive load and intelligence for schematic map design and wayfinding information. Documented, presented and gained acceptance of ideas. The importance of these flagged thereafter on relevant webpages highlighting company approaches to information design.

DEGREES | SCHOLARSHIPS | TRAINING | AWARDS | NOMINATIONS

Training: Professional Diploma in UX Design, UX Design Institute, 2023

Award: Best International Research Impact, University of Essex, 2022

Nomination: Edward Stanford Travel Writing Award, *Airline Maps: A Century of Art & Design*, 2020

Award: NACIS Atlas of Design, Chicago EI network inspired by Frank Lloyd Wright, 2018

Training: Information Design Summer School, Simplification Centre, 2015

PhD, Psychology, University of Nottingham, 1992

Award: Gertrude Cropper Prize for Excellence in Research, University of Nottingham, 1990

Scholarship: EPS Study Visit Grant, Age & Cognitive Performance Centre, University of Manchester, 1990

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

BSc, Psychology (First Class Hons), University of Nottingham, 1988

VISITING LECTURESHIPS | MEMBERSHIPS | EDITORIAL POSITIONS

Guest Editor, The Cartographic Journal *special issue – Beck at 90*, 2022-2023

Visiting Lecturer, New Design University, St Pölten, Austria, 2018

Member of the Design Research Society, 2018 – present

Honorary Lecturer, School of Computing, University of Kent, 2016 - 2019

Member of the Sign Design Society, 2010 – 2020

Visiting Research Fellow, Faculty of Arts & Human Sciences, London South Bank University, 2009 - 2017

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)

- 2023 **Roberts, M.J.** Objective and subjective methods for evaluating the usability of schematic maps: The case against informal expert assessments. *The Cartographic Journal*, 60, 308-325.
- 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.

ACADEMIC PUBLICATIONS (REFEREED JOURNALS) – CONTINUED

- 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.
- 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. Strategic invariance in lexical access: The reappearance of the pseudohomophone effect. *Canadian Journal of Psychology*, 42, 24-34.

CONFERENCE AND WORKSHOP PAPERS

- 2025 **Roberts, M.J.** Round in circles and back again: Concentric circles maps twelve years on. *Fourth International Schematic Mapping Workshop*, EIVP, Paris, April. [Workshop]
- 2025 **Roberts, M.J.**, Ng, D., & Bareula, C. Using forced-journey choice methodology to investigate the usability of octolinear versus concentric circles transit maps. *Fourth International Schematic Mapping Workshop*, EIVP, Paris, April. [Workshop]
- 2020 Wu, H.-Y., Niedermann, B., Takahashi, S., **Roberts, M.J.**, & Nöllenburg, M. A Survey on Transit Map Layout — from Design, Machine, and Human Perspectives. *Computer Graphics Forum (Proceedings of EuroVis 2020)*, Vol. 39, No. 3. [Refereed]
- 2019 **Roberts, M.J.** Us versus them: Ensuring practical and psychological utility of measurements of schematic map usability. *Second International Schematic Mapping Workshop*, TU Wien, Austria, April. [Workshop]
- Roberts, M.J.** The decade of diagrams. *Second International Schematic Mapping Workshop*, TU Wien, Austria, April. [Workshop]
- 2018 Lloyd P.B., Rodgers P., & **Roberts M.J.** (2018). Metro map colour-coding: Effect on usability in route tracing. In: P. Chapman, G. Stapleton, A. Moktefi, S. Perez-Kriz, & Bellucci F. (eds.) *Diagrammatic Representation and Inference (Proceedings of Diagrams 2018: 10th International Conference, Edinburgh, June)*, *Lecture Notes in Computer Science*, 10871, (pp 411-428). Berlin: Springer Verlag. [Refereed]
- Newton, E.J., & **Roberts M.J.** Concentric circles maps: Data and implications. *Diagrams 2018: 10th International Conference*, Edinburgh, June. [Refereed]
- 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. 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]

CONFERENCE AND WORKSHOP PAPERS – CONTINUED

- 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.

OTHER PUBLICATIONS

- 2019 **Roberts, M.J.** *Tube Map Travels*. Capital Transport Publishing. [Authored book]
- Ovenden, M., & **Roberts, M.J.** *Airline Maps: A Century of Art and Design*. Penguin Books. [Authored book]
- 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). Psychology Press. [Book chapter]
- 2012 **Roberts, M.J.** *Underground Maps Unravelling*. Published by the author. [Authored book]
- 2007 **Roberts, M.J.** (Ed.). *Integrating the Mind*. Psychology Press. [Edited book]
- 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). Psychology Press. [Book chapter]
- Roberts, M.J.** Do problem solvers need to be intelligent? In M.J. Roberts (Ed.), *Integrating the Mind* (pp. 329-350). Psychology Press. [Book chapter]
- 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). Lawrence Erlbaum. [Book chapter]

OTHER PUBLICATIONS – CONTINUED

- 2005 **Roberts, M.J.** *Underground Maps after Beck*. Capital Transport Publishing. [Authored book]
- Roberts, M.J., & Newton, E.J.** (Eds.) *Methods of Thought: Individual Differences in Reasoning Strategies*. Psychology Press. [Edited book]
- 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). Psychology Press. [Book chapter]
- 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). Psychology Press. [Book chapter]
- 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 University Press. [Book chapter]
- 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). John Wiley. [Book chapter]
- 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). Lawrence Erlbaum. [Book chapter]
- 1999 **Roberts, M.J., & Russo, R.** *A student's guide to Analysis of Variance*. Routledge. [Authored book]
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INVITED KEYNOTE SPEECHES AND SEMINARS

- 2019 **Transit maps: The good, the bad & the ugly**. New Design University, St. Pölten, Austria, April. [University seminar]
- Experimental information design**. Centre for Advanced Spatial Analysis, University College London, February. [Departmental seminar]
- 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]

INVITED KEYNOTE SPEECHES AND SEMINARS - CONTINUED

- 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]
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]

PRACTITIONER/PUBLIC ENGAGEMENTS

- 2025 **The map is the reward.** The Nose Bookshop, Walton-on-the-Naze, April.
- 2024 **Why maps matter.** ID8, London, November.
- 2023 **Why Henry Beck's 1933 design was a resounding success.** International Institute for Information Design Conversation Series, Online, February.
- 2020 **From tourist guides to airline maps: Beck connections worldwide.** London Underground Railway Society, London, March.
- 2018 **Mapping Brexit.** East Suffolk Partnership *Brexit Breakfast*, Ipswich, November.
- Mapping Brexit.** University of Essex *Innovation Series*, Colchester, August.
- Transit maps: The good, the bad & the ugly.** University of the Third Age Broomfield & District branch, Broomfield, Chelmsford, May.
- Transit maps: The good, the bad & the ugly.** International Financial Reporting Standards Foundation, London, April.
- Underground maps uncharted.** London Underground Railway Society, London, April.
- 2017 **Design your own Underground Map.** Late Debate, London Transport Museum, London, November. A hands-on interactive session in which a discussion about unofficial Underground maps was followed by an invitation to attendees to experiment with their own designs of underground maps.
- 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. 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.

PRACTITIONER/PUBLIC ENGAGEMENTS – CONTINUED

- 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. 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.
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BOOKS AND MAGAZINES SHOWCASING MY DESIGNS

- 2022 Roope, C. *The History of the London Underground Map*. Pen and Sword Books, UK.
- 2021 "Menschliche Interaktion bleibt zentral", *Verband des Personals öffentlicher Dienste*, June, Switzerland.
- 2020 Morris, J.E. *Subway: The Curiosities, Secrets, and Unofficial History of the New York City Transit System*. Black Dog & Leventhal, USA.
- 2019 [Cover artwork], *American Recorder*, Autumn, USA.
"Mapping metro systems", *Geospatial Engineering*, July, UK.
- 2018 Steingisser, A., Rose, C., & Tierney, L. *Atlas of Design* (vol. 4). North American Cartographic Information Society.
- 2017 "Mapping the Southern Electric", *Live Rail*, October, UK.
"Panorama of Illustrative Maps III", *Art Quarter*, vol. 15, Singapore.
- 2016 Atkinson, S. et al. *Great City Maps: A Historical Journey Through Maps, Plans, and Paintings*. Dorling Kindersley, UK.
[Back cover artwork], *European Review of Regional Logistics*, October, Germany.
"Les meilleurs plans de métro simplifient la réalité", *Revue Transport Public*, April, France.
- 2015 Ovenden, M. *Transit Maps of the World* (2nd Ed.). Penguin Books, USA.
[Also translated into Japanese and Spanish.]
Ovenden, M., Pepinster, J., & Pontremoli, P. *L'histoire du Métro Parisien Racontée par ses Plans*. La Vie du Rail, France.
"See the ground: A man who just wants to change", *dpi*, March, Taiwan.
- 2014 "Going Underground", *The Psychologist*, May, UK.
"Liniennetz mal anders", *Spektrum Gehirn und Geist*, November, Germany.
- 2013 Shaoqiang, W. *Infographics: Designing and Visualizing Data*. Promopress, Spain.
"Concentric circles maps", *UC Quarterly*, Q3, USA.
- 2012 Dobbin, C. *London Underground Maps: Art, Design, and Cartography*. Lund Humphries, UK.
Lloyd, P.B. *Vignelli: Transit Maps*. Rochester, RIT/Cary Graphics Press, USA.
"Übersicht im Untergrund", *Die Zeit Grafik*, January, Germany.
- 2011 Cassettari, S., et al. *London in Maps: A Changing Perspective*. GeoInformation Group, UK.
Ovenden, M. *Great Railway Maps of the World*. Particular Books, USA.
- 2010 "Smooth operator", *InMadrid*, September, Spain.
- 2009 Ovenden, M. *Paris Underground: The Maps, Stations, and Design of the Metro*. Penguin Books, USA.

BOOKS AND MAGAZINES SHOWCASING – CONTINUED

- 2009 Sinclair, G. *Historic Maps and Views of London*. Black Dog & Leventhal Publishers, USA.
Sinclair, G. *Historic Maps and Views of Paris*. Black Dog & Leventhal Publishers, USA.
"Order on the Underground", *Credit Suisse Bulletin*, November/December, Switzerland.
- 2008 Ovenden, M. *Paris Metro Style in Map and Station Design*. Capital Transport Publishing, UK.
- 2007 Foxell, S. *Mapping London: Making Sense of the City*. Black Dog Publishing, UK.
- 2005 Dow, A. *Telling the Passenger Where to Get Off*. Capital Transport Publishing, UK.
- 2003 Ovenden, M. *Metro Maps of the World*. Capital Transport Publishing, UK. [Also translated into Dutch]
-

EXHIBITIONS SHOWCASING MY DESIGNS

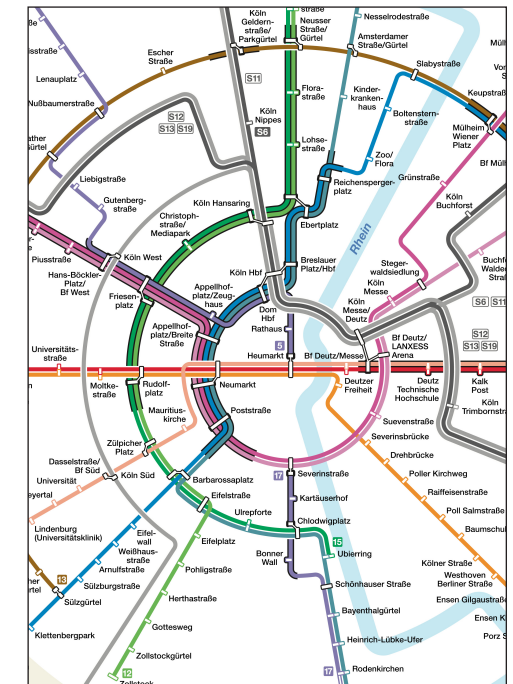
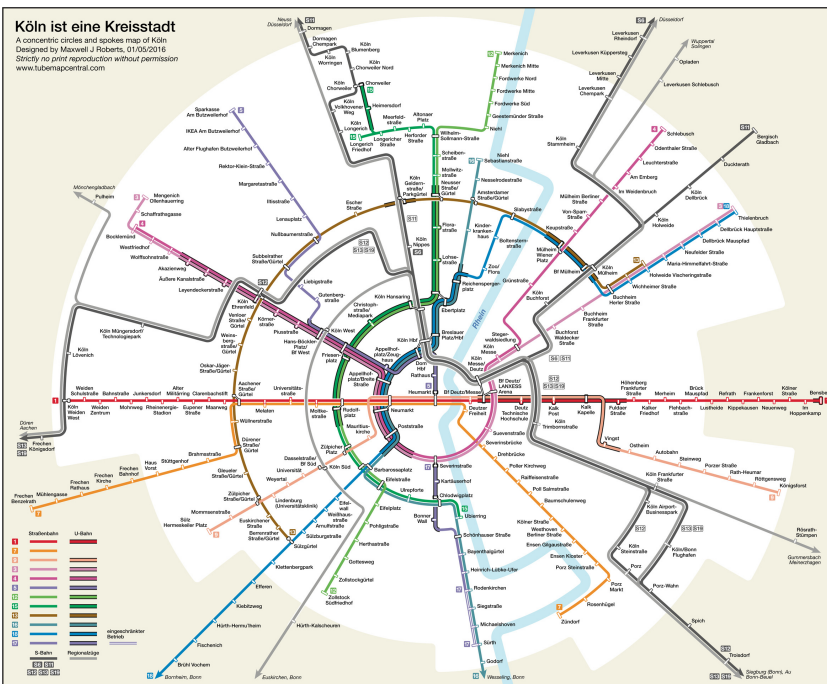
- 2024 **Mapping the Tube: 1863-2024**. The Map House, London: Oct 25th–Dec 14th. [Part of a larger exhibition]
- 2020 **Four seasons on the Essex Sunshine Coast**. Off the Rails, Wivenhoe Station, Essex: July 12th–July 11th 2021.
- 2016 **Infocenter U2/U5**. Wiener Linien, Vienna: Nov 8th–ongoing. [Part 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–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–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.
Underground maps unravelled. Minorities Gallery, Colchester: Sept 7th–24th.
Underground maps unravelled. Gallery Space, South Essex College, Southend-on-Sea: Feb 26th–March 8th.
- 2009 **Time to consider**. London Transport Museum, London: April 22nd–May 8th. [Part of a larger exhibition]

EXAMPLES OF NOTABLE DESIGNS

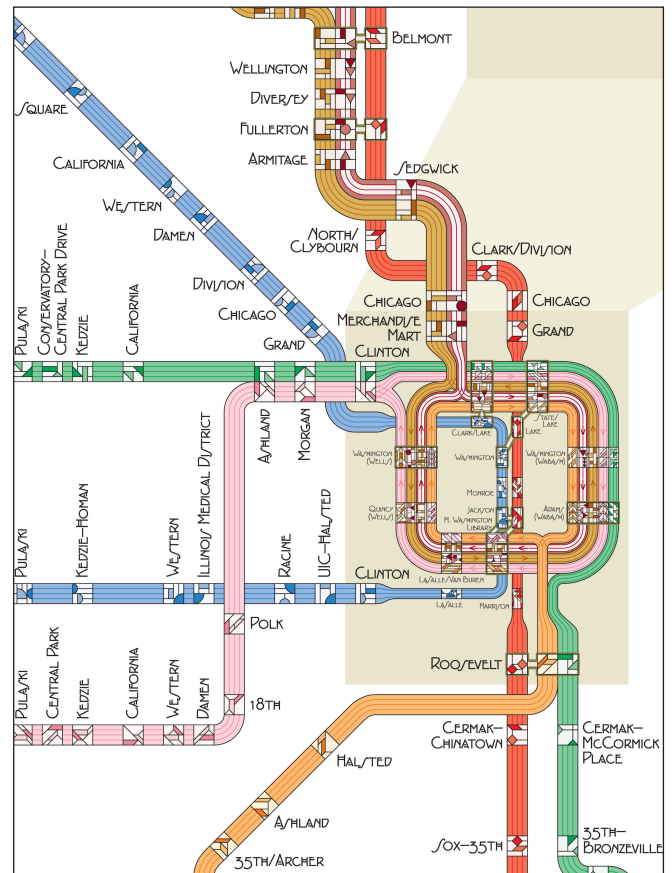
PARIS CURVILINEAR: EASIER TO USE THAN OFFICIAL VERSION



KÖLN CIRCLES: OFFICIAL KVB MAP BASED ON THIS DESIGN



CHICAGO EL INSPIRED BY FRANK LLOYD WRIGHT (ART MAP): AWARD WINNING



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