

Rachel Wu

Curriculum Vitae

Centre for Brain and Cognitive Development
Birkbeck, University of London
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Employment

- 2012-2015 NRSA Postdoctoral Fellow, University of Rochester/Indiana University (with Richard Aslin, Chen Yu, and Gaia Scerif) *Rochester, NY/Bloomington, IN, USA*
- 2012-2015 Visiting Scholar, University of Oxford (with Gaia Scerif) *Oxford, UK*
- 2011-2012 Postdoctoral Research Fellow, Birkbeck (with Martin Eimer & Tim Smith) *London, UK*

Education

- 2011 Ph.D. in Psychology
Centre for Brain and Cognitive Development (CBCD), Birkbeck (BBK), University of London
"Learning (to learn) from spatial attention cues during infancy", awarded May 31 2011, tested 600+ infants, Supervisors: Natasha Z. Kirkham & Denis Mareschal
- 2011 Diploma in Art and Design
The Institute, Middlesex University
- 2007 M.Sc. in Psychoanalytic Developmental Psychology
The Anna Freud Centre, University College London
Distinction on dissertation, Supervisors: Peter Fonagy, R. M. Pasco Fearon, & Saul Hillman
- 2006 B.S. in Psychology
B.S. in History and Anthropology
Carnegie Mellon University (CMU)
Dean's List of High Honors (summa cum laude), Psi Chi, Thesis advisor: David H. Rakison

Research Grants

- 2012-2015 Ruth L. Kirschstein National Research Service Award (NRSA) for Individual Postdoctoral Fellows, Optimal neural and behavioral markers for learning to learn during infancy (\$146,070), Role: PI. Sponsors: Richard Aslin & Chen Yu, Collaborator: Gaia Scerif (to be finalized Feb 2012)
- 2011-2012 British Academy Small Research Grant, Attentional Mechanisms for Learning to Learn, SG-110780 (£7,500), Role: PI. Co-PIs: Martin Eimer, Gaia Scerif, Richard Aslin
- 2010-2011 University of London Central Research Fund Grant, Visual Statistical Learning from Social and Nonsocial Attention Cues in a Noisy Environment (£1,678), Role: PI.
- 2009-2010 University of London Central Research Fund Grant, Imitation of the New, Not the Old: Mutual Exclusivity of Action Patterns (£1,993), Role: PI.
- 2005-2006 CMU Small Undergraduate Research Grant, Do infants associate identical labels with parts more than shapes of objects? (\$500), Role: PI.
- 2004-2005 CMU Small Undergraduate Research Grant, Do infants associate labels with the functional parts or the functional actions of objects? (\$500), Role: PI.

Scholarships and Awards

- 2012 Birkbeck Graduate Research School Generic Skills Funding for workshop (£1818)
- 2011 British Psychological Society (BPS) Postdoctoral Study Visits Award
- 2011 BPS Postdoctoral/Lecturer Conference Bursary
- 2011 International Congress of Psychology 2016 logo design competition, second prize
- 2011 Cognitive Development Society Travel Award
- 2011 British Academy Overseas Conference Grant
- 2011 European Cognitive Science Society Best Student Paper Prize
- 2011 Institute of Cognitive Neuroscience (ICN) Brain Travel Grant
- 2011 Society for Research in Child Development (SRCD) Student Travel Award
- 2010 BPS Developmental Section International Collaboration Award
- 2010 Society for Reproductive and Infant Psychology (SRIP) postgraduate prize
- 2010 ICN Brain Travel Grant

- 2009 BPS Postgraduate Study Visits Award, to visit Indiana University
 2009 Experimental Psychology Society (EPS) Grindley Grant, conference travel
 2009 Roberts@BBK 2009 Postgraduate First Prize
 2008-2010 Birkbeck International Research Studentship
 2007-2010 Birkbeck Overseas Research Scholarship, by faculty nomination
 2006 CMU Women's Association Scholarship, by faculty nomination
 2006 CMU Meeting of the Minds Psychology Department Research Award

Publications/Manuscripts

- Wu, R.**, & Kirkham, N. Z. (2010). No two cues are alike: Depth of learning during infancy is dependent on what orients attention. *Journal of Experimental Child Psychology*, *107*, 118-136. doi:10.1016/j.jecp.2010.04.014
- Wu, R.**, Mareschal, D., & Rakison, D. H. (2011). Attention to multiple cues during spontaneous object labeling. *Infancy*, *16*, (5), 545-556. doi: 10.1111/j.1532-7078.2010.00061.x
- Wu, R.**, Gopnik, A., Richardson, D. C., & Kirkham, N. Z. (2011). Infants learn about objects from statistics and people. *Developmental Psychology*, *47* (5), 1220-1229. doi: 10.1037/a0024023
- Yurovsky, D., **Wu, R.**, Yu., C., Kirkham, N. Z., & Smith, L. B. (2011). Model selection for eye movements: assessing the role of attentional cues in infant learning. In E. J. Davelaar (Ed.), *Connectionist models of neurocognition and emergent behavior: From theory to applications*. (pp. 58-75) Singapore: World Scientific.
- Scerif, G., & **Wu, R.** (in press). Developmental Disorders. In A.C. Nobre & S. Kastner (Eds.) *The Oxford Handbook of Attention*. Oxford: OUP
- Karmiloff-Smith, A., Broadbent, H., Farran, E. K., Longhi, E., D'Souza, D., Metcalfe, K., Tassabehji, M., **Wu, R.**, Senju, A., Happe, F., Turnpenny, P., & Sansbury, F. (forthcoming). Social Cognition in Williams Syndrome: Insights from Partial Deletion Patients. *Frontiers in Psychology*.
- Kirkham, N. Z., Richardson, D. C., **Wu, R.**, & Johnson, S. P. (accepted). The importance of 'what': Infants use featural information to index events. *Journal of Experimental Child Psychology*.
- Wu, R.**, Kirkham, N. Z., Swan, K. A., & Gliga, T. (under revision). Direct social signals scaffold learning from novel attention cues during infancy.
- Lloyd-Fox, S., **Wu, R.**, Elwell, C. E., & Johnson, M. H. (submitted). Common neurodevelopment of action perception and production in human infants.
- Morse, A., Hannagan, T., & **Wu, R.** (submitted). Response to Rohlfing, K. J. and Wrede, B. 'What Novel Scientific and Technological Questions Developmental Robotics Bring to HRI? Are We Ready for a Loop?' *IEEE Transactions on Autonomous Mental Development*.
- Wu, R.**, Scerif, G., Aslin, R. N., Smith, T. J., & Eimer, M. (to be submitted Feb 2012). Visual Search for the Familiar and Novel: ERP correlates of matching items and matching categories.
- Wu, R.**, Smith, T. J., Nicholas, S., & Eimer, M. (to be submitted March 2012). ERP marker of attentional target selection during visual search with eye movements.
- Wu, R.**, Hannagan, T., Aslin, R. N., Yu, C., Kirkham, N. Z., & Scerif, G. (to be submitted Mar 2012). Attending to learn, learning to attend: Developmental dynamics.

Peer-reviewed Conference Proceedings

- Wu, R.**, Gopnik, A., Richardson, D. C., & Kirkham, N. Z. (2010). Social cues support learning about objects from statistics in infancy. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. 1228-1233). Portland, OR: Cognitive Science Society.
- Wu, R.**, Kirkham, N. Z., Swan, K. A., & Gliga, T. (2011). Infants use social signals to learn from unfamiliar referential cues. In C. Hoelscher, T. F. Shipley, & L. Carlson (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society*. Boston, MA: Cognitive Science Society.
- Wu, R.**, Kirkham, N. Z., Swan, K. A., & Gliga, T. (2011). Social signals scaffold learning from novel cues during infancy. In B. Kokinov, A. Karmiloff-Smith, & N. Nersessian (Eds.), *Proceedings of the European Conference on Cognitive Science*. Sofia, Bulgaria: New Bulgarian University Press. Awarded Best Student Paper Prize.
- Hannagan, T., & **Wu, R.** (2011). Cued multimodal learning in infancy: A neuro-computational model. In C. Hoelscher, T. F. Shipley, & L. Carlson (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society*. Boston, MA: Cognitive Science Society.
- Yurovsky, D., Hidaka, S., & **Wu, R.** (submitted). Quantitative Linking Hypotheses for Infant Eye

Movements.

Conference Presentations

- Yurovsky, D., Hidaka, S., & **Wu, R.** (2012, June). Quantitative Linking Hypotheses for Infant Eye Movements. Talk to be presented at ICIS, Minneapolis, MN, USA.
- Hannagan, T., & **Wu, R.** (2012, June). A computational model for cued infant learning. Talk to be presented at ICIS, Minneapolis, MN, USA.
- Wu, R.**, Scerif, G., Aslin, R. N., Smith, T. J., & Eimer, M. (2012, May). Top-down attentional selection as a marker of learning: An ERP study. Poster submitted to VSS, Naples, FL, USA.
- Wu, R.**, Scerif, G., Aslin, R. N., Smith, T. J., & Eimer, M. (2012, March). Top-down attentional selection as a marker of learning: An ERP study. Talk to be presented at the Gaze Bias Learning workshop, Tokyo, Japan.
- Wu, R.**, & Kirkham, N. Z. (2012, March). Learning to learn from attention cues during infancy. Keynote to be presented at Japan Society for Developmental Psychology conference, Nagoya, Japan.
- Wu, R.**, Scerif, G., Aslin, R. N., Smith, T. J., & Eimer, M. (2012, Jan). Top-down attentional selection as a marker of learning: An ERP study. Talk presented at the Gaze Bias Learning workshop, London, UK.
- Wu, R.**, Smith, T. J., Nicholas, S., & Eimer, M. (2011, Nov). ERP marker of attentional target selection during visual search with eye movements. Poster presented at Society for Neuroscience, Washington D.C.
- Wu, R.**, Kirkham, N. Z., Swan, K. A., & Gliga, T. (2011, Oct). Direct social signals scaffold and transfer learning from unfamiliar referential cues during infancy. Poster to be presented at Cognitive Development Society, Philadelphia, PA.
- Wu, R.**, & Kirkham, N. Z. (2011, Oct). Learning to learn from attention cues during infancy. Talk to be presented at Cognitive Development Society, Philadelphia, PA.
- Hannagan, T., & **Wu, R.** (2011, August). A computational model for cued infant learning. Poster presented at ICDL, Frankfurt, Germany.
- Hannagan, T., & **Wu, R.** (2011, July). Cued multimodal learning in infancy: A neuro-computational model. Poster presented at CogSci, Boston, MA.
- Wu, R.**, Kirkham, N. Z., Swan, K. A., & Gliga, T. (2011, July). Direct social signals scaffold and transfer learning from unfamiliar referential cues during infancy. Talk presented at CogSci, Boston, MA.
- Wu, R.**, Kirkham, N. Z., Swan, K. A., & Gliga, T. (2011, May). Infants use social signals to learn from unfamiliar referential cues. Talk presented at EuroCogSci, Sofia, Bulgaria.
- Wu, R.**, Kirkham, N. Z., & Gliga, T. (2011, March). Infants use social signals to learn from unfamiliar referential cues. Poster presented at the Society for Research in Child Development (SRCD) Biennial Meeting, Montreal, QC, Canada.
- Wu, R.**, Gopnik, A., Richardson, D. C., & Kirkham, N. Z. (2010, Sept). Infants learn about objects from statistics and people. Poster presented at the Atkinson Braddick Celebration and Oxford Autumn School in Cognitive Neuroscience, Oxford, UK.
- Wu, R.**, & Kirkham, N. Z. (2010, Sept). Learning from attention cues during infancy. Talk presented at the British Psychological Society (BPS) Developmental Section Conference, London, UK.
- Wu, R.**, & Kirkham, N. Z. (2010, Sept). Learning from attention cues during infancy. Postgraduate prize talk presented at the Society for Reproductive and Infant Psychology (SRIP) annual conference, Leuven, Belgium.
- Wu, R.**, Gopnik, A., Richardson, D. C., & Kirkham, N. Z. (2010, August). Social cues facilitate visual statistical learning in infancy. Talk presented at CogSci, Portland, OR, USA.
- Yurovsky, D., **Wu, R.**, Kirkham, N. Z., & Yu, C. (2010, August). Learning cross-modal contingencies through attention cues. Poster presented at CogSci, Portland, OR, USA.
- Yurovsky, D., **Wu, R.**, Hidaka, S., Yu, C., & Smith, L. B. (2010, August). Linking Learning to Looking: Model Selection for Eye Movements. Talk presented at the 43rd Annual Meeting of the Society for Mathematical Psychology, Portland, Oregon, USA.
- Wu, R.**, Gopnik, A., & Kirkham, N. Z. (2010, May). Learning about objects from statistics and people. Invited talk presented at the EyeTraCKConf, Tobii Technology, Uppsala, Sweden.
- Wu, R.**, Gopnik, A., & Kirkham, N. Z. (2010, May). Rapid visual statistical learning with a social attention cue. Poster presented at the Vision Sciences Society (VSS) Annual Meeting, Naples, FL, USA.
- Amir, O., **Wu, R.**, & Biederman, I. (2010, May). Adult shape preferences are evident in infancy. Poster presented at VSS, Naples, FL, USA.
- Yurovsky, D., **Wu, R.**, Kirkham, N. Z., & Yu, C. (2010, April). Learning cross-modal contingencies through attention cues. Talk presented at the Neural Computation and Psychology Workshop (NCPW),

London, UK.

- Wu, R., & Kirkham, N. Z.** (2010, March). Learning (to learn) from attention cues in infancy. Talk presented at the International Conference on Infant Studies (ICIS), Baltimore, MD, USA.
- Wu, R., Gopnik, A., & Kirkham, N. Z.** (2010, March). Rapid visual statistical learning with a social attention cue. Poster presented at ICIS, Baltimore, MD, USA.
- Kirkham, N. Z., & **Wu, R.** (2010, March). Learning what to learn: How different attention cues mediate what and how babies learn. Talk presented at ICIS, Baltimore, MD, USA.
- Wu, R., Gopnik, A., & Kirkham, N. Z.** (2010, January). Rapid visual statistical learning with a social attention cue. Poster presented at the Cognitive Development Center (CDC) Opening Conference, Budapest, Hungary.
- Wu, R., & Kirkham, N. Z.** (2009, Sept). Perceptual learning in a noisy environment. Talk presented at the BPS Developmental Section Conference, Nottingham, UK.
- Wu, R., Kirkham, N. Z., & Markman, E. M.** (2009, Sept). Imitation of the new, not the old: Mutual exclusivity of action patterns. Talk presented at the BPS Developmental Section Conference, Nottingham, UK.
- Wu, R., & Kirkham, N. Z.** (2009, June). Binding in a noisy environment. Talk presented at the Roberts@BBK 2009 Postgraduate Prize Competition, London, UK.
- Wu, R., & Kirkham, N. Z.** (2009, April). Binding across multiple redundant cues in a noisy environment. Talk presented at the SRCD Biennial Meeting, Denver, CO, USA.
- Wu, R., & Kirkham, N. Z.** (2009, April). Learning from looking: Impact of attention-directing cues on visual pattern processing in infancy. Poster presented at SRCD 2009, Denver, CO, USA.
- Kirkham, N. Z., **Wu, R., & Markman, E. M.** (2009, April). Imitation of the new, not the old: Mutual exclusivity of action patterns. Poster presented at SRCD 2009, Denver, CO, USA.
- Wu, R., & Kirkham, N. Z.** (2008, Sept). Learning from looking: Impact of attention-directing cues on visuo-spatial learning in infancy. Talk presented at the BPS Developmental Section Conference, Oxford Brookes, UK.
- Wu, R., & Rakison, D. H.** (2008, March). Attention to features in object labeling. Poster presented at ICIS, Vancouver, BC, Canada.
- Wu, R., & Rakison, D. H.** (2006, May). Attention to features in object labeling. Talk presented at CMU, Meeting of the Minds, Pittsburgh, PA, USA.
- Wu, R., & Rakison, D. H.** (2005, May). Do infants associate parts with function, motion, or objects? Poster presented at CMU, Meeting of the Minds, Pittsburgh, PA, USA.
- Wu, R., & Rakison, D. H.** (2005, April). Do infants associate parts with function, motion, or objects? Poster presented at Marshall Univ., 2005 Tri-State Psychology Conference, Huntington, WV, USA.

Workshop Organization

- 2012/03 Gaze, Bias, Learning II: Linking Computation, Neuroscience, and Cognitive Development; Invited speakers: Shinsuke Shimojo, Takashi Omori, Masamichi Sakagami, Jan Lauwereyns, Shohei Hidaka, & R. Wu, Tamagawa University, Tokyo
- 2012/01 Gaze, Bias, Learning: Linking Computation, Neuroscience, and Cognitive Development (afternoon workshop); How to get ahead in academia in 5 countries (morning workshop); Invited speakers: Jan Lauwereyns, Jochen Triesch, Gaia Scerif, Thomas Hannagan, Eddy Davelaar, & R. Wu, Birkbeck, London
- 2010/10 First PhD graduation seminar event at Birkbeck, Discussant: Albert Yonas

Other Talks/Lectures

- 2012 EEG Research Methods, BBK
Developmental Research Methods, BBK
- 2011 University of Plymouth (with T. Hannagan)
Cognitive Development Centre, Central European University
University College London, Institute of Child Health MSc lecture
- 2010 University of Massachusetts Boston
Birkbeck Dept of Psychological Sciences PhD graduation seminar event
CBCD internal seminar
Cognitive Development Centre, Central European University
Developmental Risk and Resilience Unit, University College London

- Developmental seminar, Indiana University
 Computational Cognition and Learning Lab, Indiana University (with D. Yurovsky)
 Aslin/Newport Lab, University of Rochester
 Cognitive Brown Bag, University of Delaware
- 2009 CBCD internal seminar
 Cognitive Development seminar series, University of Oxford
 'Perception, cognition, and the environment', Developmental Psychology, Birkbeck
 CBCD internal seminar
- 2004 'Moral development', Principles of Child Development, Carnegie Mellon

Reviews

Book review: Sommer, D. (2009). *Childhood Psychology: An Integrative Approach*. Palgrave Macmillan.
 Reviewer for 2012 ICIS, 2011 SRCD, 2011-2012 CogSci, 2011 EuroCogSci. Ad hoc reviewer for *Cognition*,
Developmental Science, *Infancy*.

Other Employment

- 2009-2010 Demonstrator: Research Methods II (BBK) *London, UK*
 2009 Seminar Leader: General Foundations of Psychology (BBK) *London, UK*
 2007-2010 Babylab Administrator (CBCD) *London, UK*
 2006-2007 Research Assistant: Anna Freud Centre Infant Research Lab – P. Fonagy (UCL) *London, UK*
 2003-2006 Research Assistant: Infant Cognition Lab – D. Rakison (CMU) *Pittsburgh, PA*
 2005-2006 Recitation Leader: Introduction to Psychology (CMU) *Pittsburgh, PA*
 2004-2006 Research Assistant: Social Decision Sciences Lab – J. Dana (CMU) *Pittsburgh, PA*
 2003-2006 Research Assistant: Human-Computer Interaction Lab – R. Kraut (CMU) *Pittsburgh, PA*
 2005-2006 Research Assistant: Social Psychology Lab – S. Graham (CMU) *Pittsburgh, PA*
 2004 Teaching Assistant: Principles of Child Development (CMU) *Pittsburgh, PA*

Professional Memberships

International Society on Infant Studies, Society for Research in Child Development, Vision Sciences Society,
 Cognitive Science Society, Society for Reproductive and Infant Psychology, Society for Neuroscience

Design

Logo and website: International Conference on Development and Learning 2012, San Diego, CA, USA
 Logo: XXXI International Congress of Psychology 2016, Yokohama, Japan, second prize (September, 2011)
 Logo: Genes Environment Lifespan Lab, BBK (August, 2011)
 David E. Rumelhart prize medallion (with David Waller): *Cognitive Science Society* (2010-present)
 Logo and book cover: 12th Neural Computation and Psychology Workshop (April, 2010)
 Cover art: Gershkoff-Stowe, L., & Rakison, D. H. (Eds.), (2005). *Building object categories in developmental time*. Hillsdale, NJ: Erlbaum

Other Funding

- 2011 CogSci travel award for Rumelhart medallion, Glushko-Samuelson Foundation
 2011 Central European University Summer School, 'Brains and Minds' full scholarship
 2010 CogSci travel grant for Rumelhart medallion design, Glushko-Samuelson Foundation
 2010 VSS reimbursed conference fee for volunteer work
 2010 NCPW reimbursed conference fee for logo and book cover design
 2010 ICIS reimbursed conference fee for program cover design
 2009 Central European University Summer School, 'Memory and Mind' waived tuition fee
 2009 John Merck Sackler Summer Institute, 'Biology of Developmental Disabilities'
 reimbursed travel costs
 2009 SRCD reimbursed conference fee for volunteer work
 2008 CBCD Richard Aslin Travel Award

Other Dissemination/Publicity

Feature in Birkbeck College newsletter, London, UK (Autumn 2009, 2010)
 Feature in Birkbeck postgraduate prospectus (Autumn 2010)

BBK international research student rep for Institutional Auditors (June 2010)

Feature in Anna Freud Centre prospectus (Autumn 2009)

Interview in *The Good Presentation*, Angel Productions (Oct 2009)

Press release for BPS 'Imitation study' presentation, Nottingham, UK (Sept 2009)

Feature in Birkbeck Department of Psychology newsletter, London, UK (Summer 2009)

Feature in *Growing Babies*, BBC, London, UK (Dec 2008)