

# KRISTEN TUMMELTSHAMMER

Dept. of Cognitive, Linguistic & Psychological Sciences  
Brown University, Providence, RI, 02912

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## EDUCATION

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**Birkbeck, University of London**, London, UK **2010 to 2015**

- Ph.D. in Experimental Psychology
- Supervisors: Dr. Natasha Kirkham & Dr. Denis Mareschal
- Thesis title: "Patterns, predictions, and infants' search for visual regularity"
- Research Areas: Infant attention, perception & learning; learning mechanisms; development of visual attention
- Methods: Behavioral, eye-tracking, and EEG/ERP with infants

**Brown University**, Providence, RI **2005 to 2009**

- B.S. in Cognitive Neuroscience, Magna Cum Laude
- Focus Areas: Developmental Psychology, Cognitive Psychology, Cognitive Neuroscience, Research Methods, Neuroimaging, and Statistics

## RESEARCH EXPERIENCE

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### Postdoctoral Research Fellow

Dept. of Cognitive, Linguistic & Psychological Sciences, Brown University, Providence, RI **2015 to present**

- Director: Dr. Dima Amso

### Ph.D. Student Researcher

Centre for Brain and Cognitive Development, Birkbeck, University of London, UK **2010 to 2015**

- Director: Prof. Mark Johnson, PI: Dr. Natasha Kirkham

### Research Assistant

Speech & Psycholinguistics Lab, Brown University, Providence, RI **2009 to 2010**

- PI: Dr. Emily B. Myers

### Research Assistant

Causality and Mind Lab at Brown University, Providence, RI **2007 to 2009**

- PI: Dr. David Sobel

## PUBLICATIONS

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1. **Tummeltshammer, K.S.**, Wu, R.W., Sobel, D.M., & Kirkham, N.Z. (2014). Infants track the reliability of potential informants. *Psychological Science*, 25, 1730-1738. doi: 10.1177/0956797614540178
2. **Tummeltshammer, K.S.**, Mareschal, D., & Kirkham, N.Z. (2014). Infants' selective attention to reliable visual cues in the presence of salient distracters. *Child Development*, 85, 1981-1994. doi: 10.1111/cdev.12239.
3. Wu, R., Gliga, T., **Tummeltshammer, K.S.**, & Kirkham, N.Z. (2014). Ostensive signals support learning from novel attention cues during infancy. *Frontiers in Developmental Psychology*, 5:251. doi: 10.3389/fpsyg.2014.00251.

4. **Tummeltshammer, K.S.**, Wu, R.W., & Kirkham, N.Z. (2013). 8-month-olds know whose face is reliable. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35<sup>th</sup> Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
5. **Tummeltshammer, K.S.**, & Kirkham, N.Z. (2013). Learning to look: Probabilistic variation and noise guide infants' eye movements. *Developmental Science*. doi: 10.1111/desc.12064
6. **Swan, K.A.**, & Myers, E.B. (2013). Category labels induce boundary-dependent perceptual warping in learned speech categories. *Second Language Research*, 29, 391-411.
7. Myers, E.B., & **Swan K.A.** (2012). Effects of category learning on neural sensitivity to non-native phonetic categories. *Journal of Cognitive Neuroscience*, 24:8, 1695-1708.
8. Kirkham, N.Z., Wagner, J., **Swan, K.A.**, & Johnson, S. (2012). Sound support: Intermodal information facilitates infants' perception of an occluded trajectory. *Infant Behavior & Development*, 35, 174-178.
9. 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 33<sup>rd</sup> Annual Conference of the Cognitive Science Society*. Boston, MA: Cognitive Science Society.
10. Wu, R., Kirkham, N.Z., **Swan, K.A.**, & Gliga, T. (2011). Social signals scaffold learning from novel cues during infancy. In A. Karmiloff-Smith, B. Kokinov, & N. Nersessian (Eds.), *Proceedings of the Annual Conference of the European Cognitive Science Society*. Sofia, Bulgaria: Cognitive Science Society.

#### Ongoing Projects:

11. **Tummeltshammer, K.S.**, Amso, D., French, R.M., & Kirkham, N.Z. (submitted). Across space and time: Infants learn from backward and forward visual statistics.
12. Xiao, N.G., Quinn, P.C., Liu, S., Wu, R., **Tummeltshammer, K.S.**, ... & Lee, K. (under revision). Implicit racial bias emerges in infancy.
13. **Tummeltshammer, K.S.**, Pomiechowska, B., Gliga, T., & Kirkham, N.Z. (in preparation). Spatiotemporal regularity and infants' visual predictions: an ERP study.
14. **Tummeltshammer, K.S.**, Sobel, D.M., & Kirkham, N.Z. (in preparation). Infants discover the predictive nature of gaze.
15. **Tummeltshammer, K.S.**, & Kirkham, N.Z. (in preparation). Interactions between statistics and salience in infant visual learning.

#### PEER-REVIEWED CONFERENCE ABSTRACTS

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1. **Tummeltshammer, K.S.**, Wu, R., & Kirkham, N.Z. (2015, June). Infant statistical learners attend selectively to patterned over random visual objects. Poster presented at the BCBL Conference for Interdisciplinary Advances in Statistical Learning, San Sebastian, Spain.
2. **Tummeltshammer, K.S.**, Pomiechowska, B., Gliga, T., & Kirkham, N.Z. (2015, June). Spatiotemporal regularity and infants' visual predictions: an ERP study. Poster presented at the BCBL Conference for Interdisciplinary Advances in Statistical Learning, San Sebastian, Spain.
3. **Tummeltshammer, K.S.**, Sobel, D.M., & Kirkham, N.Z. (2015, March). Selective gaze following across the first postnatal year. Talk presented in organized symposium, titled *Social Attention and Gaze Following: Factors that Influence Attention and Learning*, at the Society for Research in Child Development (SRCD) Biennial Meeting, Philadelphia, PA.
4. **Tummeltshammer, K.S.**, Wu, R., & Kirkham, N.Z. (2015, March). Infant statistical learners attend selectively to patterned over random visual objects. Poster presented at the Society for Research in Child Development (SRCD) Biennial Meeting, Philadelphia, PA.
5. **Tummeltshammer, K.S.**, Sobel, D.M., & Kirkham, N.Z. (2015, January). Selective gaze following across the first postnatal year. Talk presented in organized symposium, titled *Selective Learning from Others in Infancy and*

- Toddlerhood* (Organized and chaired by **K.S. Tummeltshammer**), at the 5<sup>th</sup> Annual CEU Conference on Cognitive Development, Budapest, Hungary.
6. **Tummeltshammer, K.S.**, Pomiechowska, B., Gliga, T., & Kirkham, N.Z. (2015, January). Spatiotemporal regularity and infants' visual predictions: an ERP study. Poster presented at the 5<sup>th</sup> Annual CEU Conference on Cognitive Development, Budapest, Hungary.
  7. **Tummeltshammer, K.S.**, Wu, R., Sobel, D.M., & Kirkham, N.Z. (2014, July). Infants monitor the accuracy of potential informants. Talk to be presented in organized symposium, titled *Can I Trust you? Infants Understanding of Reliable Cues*. (Organized and chaired by **K.S. Tummeltshammer**), at the 19<sup>th</sup> Biennial International Conference on Infant Studies (ICIS), Berlin, Germany.
  8. **Swan, K.A.**, & Kirkham, N.Z. (2013, April). Advancing statistical methods for eye-tracking investigations of infant learning. Poster presented at the Society for Research in Child Development (SRCD) Biennial Meeting, Seattle, WA.
  9. **Swan, K.A.**, Mareschal, D., & Kirkham, N.Z. (2013, April). Look at This! Infants' selective attention to reliable visual cues in the presence of salient distracters. Poster presented at the Society for Research in Child Development (SRCD) Biennial Meeting, Seattle, WA.
  10. **Swan, K.A.**, Mareschal, D., & Kirkham, N.Z. (2013, Jan). Look here! No, here! Infants' selective attention to reliable visual cues in the presence of salient distracters. Poster presented at the 3<sup>rd</sup> Annual CEU Conference on Cognitive Development, Budapest, Hungary.
  11. **Swan, K.A.**, & Kirkham, N.Z. (2012, Oct). Analyzing infant eye-movement data with linear mixed-effects models. Poster accepted to the Uppsala Conference on Novel Methods in Developmental Research, Uppsala, Sweden.
  12. **Swan, K.A.**, Mareschal, D., & Kirkham, N.Z. (2012, Sept). Infants learn to disengage when salient events are uninformative. Talk presented at the British Psychological Society Developmental Section Conference, Glasgow, Scotland.
  13. **Swan, K.A.**, Amso, D., & Kirkham, N.Z. (2012, Sept). Infants learn visual relations from conditional statistics. Poster presented at the British Psychological Society Developmental Section Conference, Glasgow, Scotland.
  14. **Swan, K.A.**, & Kirkham, N.Z. (2012, June). Learning with noisy visual information in infancy. Talk presented in organized symposium, titled *The Baby in Context: Exploring early learning in more natural environments* (Organized by K. Swan, chaired by N. Kirkham), at the 18<sup>th</sup> Biennial International Conference on Infant Studies (ICIS), Minneapolis, MN.
  15. **Swan, K.A.**, Amso, D., & Kirkham, N.Z. (2012, June). Infants learn spatial and temporal visual relations from directional statistics. Poster presented at the 18<sup>th</sup> Biennial International Conference on Infant Studies (ICIS), Minneapolis, MN.
  16. **Swan, K.A.**, Mareschal, D., & Kirkham, N.Z. (2012, June). 8-month-olds learn to disengage when salient events are uninformative. Poster presented the 5<sup>th</sup> Annual EyeTrackKids: Eye-tracking methodology in infant and child research Conference, Minneapolis, MN.
  17. **Swan, K.A.**, & Kirkham, N.Z. (2012, Jan). Infants learn from multiple sources of visual information. Poster presented at the 2<sup>nd</sup> Annual CEU Conference on Cognitive Development, Budapest, Hungary.
  18. **Swan, K.A.**, & Kirkham, N.Z. (2011, Oct). Infants learn visual sequences with noisy statistics. Poster presented at the 7<sup>th</sup> Biennial Meeting of the Cognitive Development Society, Philadelphia, PA.
  19. **Swan, K.A.**, & Kirkham, N.Z. (2011, Sept). Learning probabilistic relations among visual events in infancy. Talk presented at the British Psychological Society Developmental Section Conference, Newcastle-upon-Tyne, UK.
  20. **Swan, K.A.**, & Kirkham, N.Z. (2011, July). Extracting statistical relations from noisy visual scenes. Poster presented at the 33<sup>rd</sup> Annual Conference of the Cognitive Science Society, Boston, MA.

21. Wu, R., Kirkham, N.Z., **Swan, K.A.**, & 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.
22. Myers, E.B., & **Swan, K.A.** (2010, Nov). Emerging Categorical Perception of Non-Native Speech Sounds: Behavioral and Neural Effects of Categorization Training. Poster presented at Neurobiology of Language Conference, San Diego, CA.

## AWARDS & GRANTS

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**National Research and Service Award (NRSA)**, National Institutes of Health (NIH) – Active from Sept 2015

- Awarded \$157,290 over three years for research and training, as primary investigator.

**Travel Grant**, Experimental Psychology Society (EPS) Grindley Grant – March 2015

- Awarded £500 to attend Society for Research in Child Development (SRCD) conference in Philadelphia, PA.

**Student Bursary Winner**, Budapest CEU Conference on Cognitive Development – Jan 2015

- Awarded bursary to attend the annual BCCCD conference in Budapest, Hungary

**Student Bursary Winner**, Budapest CEU Conference on Cognitive Development – Jan 2013

- Awarded bursary to attend the annual BCCCD conference in Budapest, Hungary.

**Travel Grant**, Psychology Post-graduate Affairs Group, UK – Oct 2012

- Awarded £100 toward conference travel and expenses.

**Student Bursary Winner**, British Psychological Society Developmental Section – Sept 2012

- Awarded bursary to attend the annual BPS Developmental Section conference in Glasgow, Scotland.

**Fully funded Summer School**, Mortimer D. Sackler, M.D. Summer Institute, New York – July 2012

- Accepted to attend four-day workshop on the theme *Plasticity & Learning*, with funded tuition and accommodation.

**Travel Grant**, Guarantors of Brain – June 2012

- Awarded £800 to attend International Conference on Infant Studies (ICIS) in Minneapolis, MN.

**Small Research Grant**, Nuffield Foundation Social Science Small Grant Scheme – 2011 to 2013

- Co-authored grant awarded to PI Dr. Natasha Kirkham (£13,900) for a period of 30 months

**Small Research Grant**, British Academy – 2011 to 2012

- Co-authored grant awarded to PI Dr. Natasha Kirkham (£7,326) for a period of 12-18 months

**Graduate Teaching Studentship**, Dept. of Psychological Sciences, Birkbeck – 2010 to 2014

- Awarded full tuition, fees, and stipend (£13,262/yr) for a period of 3-4 years

## MEMBERSHIPS & SERVICE

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**Professional Memberships:** Association for Psychological Science, British Psychological Society: Developmental Section, Cognitive Development Society, Cognitive Science Society, International Society on Infant Studies, and Society for Research in Child Development

**Ad-hoc Reviewer:** *Child Development, Cognition, and Developmental Science*

## TEACHING EXPERIENCE

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**Graduate Teaching Assistant**, Dept. of Psychological Sciences, Birkbeck

**2010 to 2015**

- Advanced Quantitative Methods (Lab report and exam marker, 2014-15)
- Developmental Psychology (TA, exam marker, and guest lecturer, 2010-15)

- Foundations in Psychology (Seminar leader, exam marker, and guest lecturer, 2010-15)
- Introduction to Research Methods (Demonstrator, 2011-13)
- Language (Guest lecturer, 2011-12)
- Perception, Attention, & Performance (TA, exam marker, and guest lecturer, 2011-15)
- Psychobiology (Exam marker, 2010-11)
- Research Methods (TA, demonstrator, and guest lecturer 2010-15)

**Guest lecturer**, Developmental Psychology, NYU in London program

**Spring 2013**

## OTHER SKILLS

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**Computers:** Word, PowerPoint, Excel, SPSS, R, Adobe packages (Photoshop, Dreamweaver, Director), video-editing software (Final Cut, iMovie), brain imaging analysis software (SPM & AFNI, NetStation), eye-tracking software (ClearView & Tobii Studio), Matlab (for EEG and eye-tracking)

- Proficient in spoken German
- Certified in first aid, CPR, waterfront lifeguarding, and wilderness first responder
- Extensive experience working with children of all ages, in home, child care, recreational, and laboratory settings; incl. children with autism and learning / developmental delays