

# Samuel H. Forbes

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## EMPLOYMENT

- 2021 -** **Assistant Professor in Developmental Science**, Department of Psychology, Durham University
- 2018 - 21** **Senior Research Associate**, School of Psychology, University of East Anglia  
**Supervisor:** Prof. John P. Spencer  
**Project:** Probing the neural basis of visual working memory in development (NIH).

## EDUCATION

- 2014 - 18** **DPhil**, Experimental Psychology - University of Oxford, United Kingdom  
**Advisors:** Prof. Kim Plunkett & Dr E. Matthew Husband  
**Dissertation:** Colour word and colour category learning in infants and toddlers  
**Funding:** Rhodes Scholarship
- 2011 - 13** **MA (Research and Coursework)**, Linguistics and Applied Linguistics, - Nanjing Normal University, PR China  
**Advisor:** Assoc. Prof. Liang DanDan  
**Dissertation:** A Comparative Study of the Use of the Perfective Aspect Under Narrative Conditions of English and Mandarin Children  
**Funding:** Chinese Scholarship Council
- 2010 - 11** **Cert Lang**, Mandarin Chinese, - Nanjing Normal University, PR China
- 2009** **Grad Cert**, Asian Studies, - University of Tasmania, Australia
- 2006 - 08** **BA**, Japanese and Mandarin, - University of Tasmania, Australia

## FUNDING AND AWARDS

- 2023** **Software Sustainability Institute Fellowship**, value £3000
- 2020** **Award for Special Merit in Research**, University of East Anglia
- 2019** **Flux Society Travel Award** \$1000 USD for conference travel
- 2019** **LCICD Fee Waiver** valued at approximately £250
- 2017** **Brasenose College Hulme Completion Grant** funding associated with thesis completion.
- 2017** **Brasenose College Grant** funding for conference attendance £448
- 2016** **Brasenose College Grant** funding for conference attendance £450

- 2016 - 18 **Brasenose College Senior Hulme Scholarship** for outstanding DPhil performance
- 2015 **Brasenose College Grant** funding for conference attendance £436
- 2014 - 18 **Rhodes Scholarship** Tasmania & Brasenose 2014
- 2010 - 13 **Chinese Scholarship Council Award** for 4 years' study in PRC
- 2007 - 08 **Japan Student Services Organization Award** for 1 year exchange in Japan

## PEER-REVIEWED PUBLICATIONS

- 2022 **Forbes, S.H.**, Aneja, P., & Guest, O. (2022). The myth of normative development *Infant and Child Development*.
- 2022 Visser, I., Bergmann, C., Byers-Heinlein, K., Dal Ben, R., Duch, W., **Forbes, S.H.**, ... et al. (2022). Improving the generalizability of infant psychological research: The ManyBabies model. *Behavioural and Brain Sciences*. 45, e35.
- 2021 Defenderfer, J., **Forbes, S.H.**, Wijekumar, S., Hedrick, M., Plyler, P., & Buss, A. (2021). Frontotemporal activation differs between perception of simulated cochlear implant speech and speech in background noise: An image-based fNIRS study. *Neuroimage*. 240, 118385.
- 2021 **Forbes, S.H.**, Wijekumar, S., Eggebrecht, A., Magnotta, V., & Spencer, J.P. (2021). Processing pipeline for image reconstructed fNIRS analysis using both MRI templates and individual anatomy. *Neurophotonics*. 8(2), 025010.
- 2021 **Forbes, S.H.** & Plunkett, K. (2021). The development of contour processing abilities in the second year. *Developmental Psychology*. 57(5), 639-650.
- 2021 Abdelwahab, A.G., **Forbes, S.H.**, Cattani, A., Goslin, J., & Floccia, C. (2021). An adaptation of the MacArthur-Bates CDI in 17 Arabic dialects for children aged 8 to 30 months. *Language Learning and Development*. 17(4), 425-446.
- 2020 **Forbes, S.H.** (2020). PupillometryR: An R package for preparing and analysing pupillometry data. *Journal of Open Source Software*. 5(50), 2285.
- 2020 Delgado Reyes, L., Wijekumar, S., Magnotta, V.A., **Forbes, S.H.**, & Spencer J.P. (2020). The functional brain networks that underlie visual working memory in the first two years of life. *NeuroImage*. 219, 116971.
- 2020 **Forbes, S.H.**, & Plunkett, K. (2020). Linguistic and cultural variation in early color word learning. *Child Development*. 91(1), 28-42.
- 2019 **Forbes, S.H.**, & Plunkett, K. (2019). The role of colour labels in mediating infant visual attention. *Cognition*. 186, 159-170.
- 2019 **Forbes, S.H.**, & Plunkett, K. (2019). Infants show early comprehension of basic colour words. *Developmental Psychology*. 55(2), 240-249.
- 2017 **Forbes, S.H.**, & Plunkett, K. (2017). Early colour word learning in British infants. *Proceedings CogSci*, 367-372.
- 2015 Liang D.D., Song, Y.Q., **Forbes, S.H.** (2015). A contrastive study of the perfective aspect use in English and Chinese children's narratives. *Foreign Language Teaching and Research* 7(1), 81-93.

## PUBLICATIONS UNDER REVIEW

- Under Review** Forbes, S.H., & Plunkett K. Colour perception changes with basic colour word comprehension *Developmental Science*.
- Under Review** Fibla, L., Forbes, S.H., McCarthy, J., Mee, K., Magnotta, V., Deoni, S., Cameron, D., & Spencer, J.P. Language exposure and brain myelination in early development. *Journal of Neuroscience*.  
**Preprint** available at bioRxiv <https://doi.org/10.1101/2022.05.31.493945>
- Under Review** Spencer, J.P., Forbes, S.H., Naylor, S., Singh, V.P., Jackson, K., Deoni, S., Tiwari, M., & Kumar, A. Poor air quality is associated with impaired visual cognition in the first two years of life. *eLife*.  
**Preprint** available at PsyArXiv <https://psyarxiv.com/zam7c/>
- Under Review** Wijekumar, S., Forbes, S.H., Magnotta, V., Deoni, S., Jackson, K., Singh, V.P., Tiwari, M., Kumar, A., & Spencer, J.P. Stunting in infancy is associated with atypical activation of working memory and attention networks. *Nature Human Behaviour*.
- Under Review** Bakopoulou, M., Lorenz, M., Forbes, S.H., Tremlin, R., Bates, J., & Samuelson, L. Vocabulary creates automatic attention: The relation between novel words and gaze dynamics in noun generalization. *Developmental Science*.

## OPEN SOURCE SOFTWARE CONTRIBUTIONS

- 2021** Forbes, S.H. Dink, J., & Ferguson, B. eyetrackingR  
<http://www.eyetracking-r.com>
- 2020** Forbes, S.H. digitizeR  
<https://github.com/samhforbes/digitizeR>
- 2019** Forbes, S.H. PupillometryR: An R package for preparing and analysing pupillometry data.  
<https://github.com/samhforbes/PupillometryR>
- 2019** Forbes, S.H. DDLab: Common eyetracking functions needed in the Developmental Dynamics Lab. <https://github.com/samhforbes/DDLab>

## SUPERVISION

### MSc Projects

- 2021 - 22** Lauryn Clucas — The role of gesture in early language  
Jo Yee Goh — The development of grammatical categories in infancy
- 2020 - 21** Tyler Wallace — The origins of early executive attention

### Undergraduate Dissertation / Projects

- 2022 - 23** Ella Lawrenson, Isabelle Blair, Maria Iliesi, Isabella Molnar, Esther Vidal-Roig
- 2020 - 21** Rosie Green, Alice Taylor
- 2019 - 20** Jasmine Fisk, Trina Koh
- 2018 - 19** Linnea Andersson, Tyler Wallace

## TEACHING

- 2021 -** Assistant Professor in Developmental Science, Durham University  
Introduction to Psychology — Developmental and Social Psychology  
- Redesigned developmental module for > 400 first-year students

### **Language, Literacy and Numeracy in the Developing Brain**

- Course coordinator
- Designed and taught new module alongside Dr Anna Matejko

### **Advanced Developmental Psychology Review**

- Led a tutorial group of MSc Students to write a review paper each on word learning in infancy

### **Contemporary and Conceptual Issues in Psychology**

- Led three tutorial groups in topics relating to early adversity in childhood

### **Current Issues in Developmental Psychology and Psychopathology**

- Lectures to MSc students on early adversity and development of sleep

### **2018 - 21 Senior Postdoctoral Research Associate, UEA**

#### **Introduction to fNIRS and demonstration**

- Ran workshops and demonstrations for second-year, third-year and MSc courses

#### **Open Science and Reproducibility**

- Designed and ran a lecture on replicability and publishing in Developmental Psychology for MSc students
- Designed and ran a similar seminar for incoming PhD students

### **2015-18 DPhil Candidate, University of Oxford**

#### **Language and Cognition**

- Responsible for tutoring groups of 3 students at multiple colleges each year
- Redesigned and ran a core practical in MATLAB on research design for undergraduates

### **2011 - 13 MA Candidate and Lecturer, NJNU**

#### **English in an Educational Context**

- Designed and lectured 2 units per year to both of 3rd and 4th year undergraduates
- Responsible for examination and grading of students

## **INVITED TALKS**

### **Feb. 2022 Durham RIOTS Club**

Title: Version Control for Academics with GitHub

Host: Thuy-vy Nguyen

### **Feb. 2021 University of York**

Title: Mommy and me: Using cross-cultural methods to understand links between infant and mothers cognition.

Host: Eve Holden

### **Feb. 2021 University of Oslo**

Title: Was Whorf Half Right? Examining Colour Words and Colour Perception.

Host: Prof. Julien Mayor

### **Sep. 2020 BASIS 2020, Virtual conference**

Title: Examining sleep and neural development in early infancy.

### **June 2019 CLEAR 2019, Potsdam**

Title: PupillometryR: A framework for investigating pupillometry data in R.

### **Sep. 2018 University of Sussex Department of Psychology:**

Title: Colour Word and Colour Category Learning in Infants and Toddlers

Host: Prof. Anna Franklin

### **Feb. 2018 Oxford Brookes University Department of Psychology:**

Title: The Effect of Colour Word Learning on Colour Category Knowledge

Host: Dr. Nayeli Gonzalez-Gomez

## REPRESENTATIVE CONFERENCE PRESENTATIONS

- Aug. 2022** 7<sup>th</sup> Lancaster Conference on Infant and Early Child Development (LCICD)  
**Poster** Forbes, S.H., & Plunkett, K.  
Examining the links between infant colour vocabulary and categorical perception
- Sep. 2020** Flux Virtual Conference.  
**Poster** Forbes, S.H., Wijekumar, S., Delgado Reyes, L., Kumar, A., Magnotta, V., Spencer J. Assessing the development of visual working memory in a global context: The INDIA Project.
- Aug. 2019** 4<sup>th</sup> Lancaster Conference on Infant and Child Development (LCICD), Lancaster  
**Talk** Forbes, S.H., Delgado Reyes, L., Grewal, J., Deoni, S., Spencer J.P.  
The role of sleep in the development of visual working memory.
- Aug. 2019** 4<sup>th</sup> Lancaster Conference on Infant and Child Development (LCICD), Lancaster  
**Talk** Forbes, S.H. Measuring infant visual behaviour through pupil size: An introduction to PupillometryR.
- July 2019** European Congress of Psychology, Moscow  
**Talk** Forbes, S.H., Delgado Reyes, L., Grewal, J., Deoni, S., Spencer J.P.  
The role of sleep in visual working memory and brain health. Part of a symposium: *Global Brain Health and Development* chaired by S.H. Forbes

## SERVICE TO THE FIELD

### Editorial Roles

- 2022 -** **Topic editor** at Journal of Open Source Software

### Reviews

Collabra, Child Development, Neuroimage, Developmental Psychology, Cognitive Science, Language Development Research, Journal of Open Source Software, Infant and Child Development, First Language, Journal of Experimental Child Psychology, Gates Open Research, Scientific Reports

## PUBLIC ENGAGEMENT

- Oct. 2022** **Celebrate Science, Durham**  
- Helped at public event explaining psychology games to children
- Aug. 2022** **Junior Scientist Days, Durham**  
- Helped with 2 days of science events and recruitment for children in Durham
- May 2019** **Pint of Science, Norwich**  
- 3 Nights of presenting neuroscience and psychology fact or myth quiz
- Sep. 2017** **Oxford Curiosity Carnival**  
- Public engagement explaining work and playing games with parents and children
- July 2016** **UNIQ Summer School**  
- Presented an interactive introduction and workshop on testing infants  
- For outstanding State School students interesting in studying at Oxford
- Feb. 2016** **Oxford Making Links** St Catherine's College, Oxford  
- Presented a portion of research to teachers involved in early years teaching
- Sep. 2015** **Belfast Baby Day**  
- Presented two invited talks to mothers and researchers at inaugural Belfast Baby Day

## PROFESSIONAL EXPERIENCE

- 2014 - 18** **Webmaster** Oxford University BabyLab  
- Managed Lab website and social media sites
- 2015 - 17** **Graduate Mentor** Department of Experimental Psychology, University of Oxford  
- Mentored 2 first-year DPhil students each year
- 2015 - 16** **President** Brasenose College Hulme Common Room (HCR)  
- Responsible for overseeing graduate common room of approximately 250 members
- 2013 - 14** **Executive Assistant to the Arts** St Michael's Collegiate School, Tasmania  
- Responsible for administration in Arts faculty of leading girl's school

## TECHNICAL SKILLS

- Statistics** Bayesian hierarchical modeling, mixed effect modeling, survival analysis, GAMs, FDA  
- Familiar with common packages such as STAN, JAGS, lme4, brms, ggplot2, etc  
Network modelling, clustering and machine learning
- Processing** Structural and mcDESPOT MRI analysis pipelines using AFNI, FSL, ANTS etc  
Eye-tracking and Pupillometric time course analysis using a variety of tools and devices  
HOMER2, HOMER3 and NIRFast fNIRS analysis
- Coding** R, Python, Matlab, Julia, Bash, L<sup>A</sup>T<sub>E</sub>X
- Testing** Infant & Adult Eye-tracking, Pupillometry, fNIRS, Head-mounted eye-tracking,  
MRI scanning, EEG, biometric measurement