



**Economic  
and Social  
Research Council**



## **Rethinking the origins of self-awareness in human infancy with virtual reality (VR)**

### **ESRC DTP Joint Studentship**

#### **University of Birmingham and Loughborough University**

The Midlands Graduate School is an accredited Economic and Social Research Council (ESRC) Doctoral Training Partnership (DTP). One of 14 such partnerships in the UK, the Midlands Graduate School is a collaboration between the University of Warwick, Aston University, University of Birmingham, University of Leicester, Loughborough University and the University of Nottingham.

We are now inviting applications for an ESRC Doctoral Joint Studentship between the University of Birmingham (where the student will be registered) and Loughborough University to commence in October 2020.

How and when human infants become self-aware are questions of long-held and widespread interest in developmental psychology and cognitive science. Despite the importance of self-awareness across many skills such as perspective-taking, empathy and imitation, there is little consensus regarding its origins in both typical and atypical development.

Challenges to our understanding of the development of self-awareness arise because of problems with the methods which are currently available. For instance, infants' ability to pass the mirror rouge test (the "gold-standard" measure of early self-awareness) at around 18 months of age, depends also on their ability to understand mirrors.

The successful applicant to this PhD studentship will exploit an exciting and unique synergy between Dr Andy Bremner's group in the Birmingham BabyLab, and Dr Roger Newport's state-of-the-art portable VR systems developed in Loughborough which are particularly suitable for use with human infants. Use of VR will allow the PhD student to establish a new means of tracing infants' developing self-awareness by measuring infants' emerging representations of their own bodies, rather than their mirror reflections.

A portable infant VR set-up will be created by the PhD student in Loughborough (supervised by Newport) then moved to Birmingham to commence formal experimental work with infants (supervised by Bremner). Infants will participate in studies in the Birmingham BabyLab which is equipped with a range of facilities which the PhD student will be trained to use to trace the development of self-awareness, including multisensory stimulus arrays, an audiovisual observational suite, an Eyelink 1000 eye-tracker, and an EGI NetAmps 400 EEG suite with a full range of sensor nets (infant, child and adult sizes).

Establishing valid behavioural and physiological measures of emerging self-awareness promises to foster further crucial lines of enquiry into the development of atypical self-awareness in neurodevelopmental disorders, e.g., autism spectrum disorders. This will provide a strong early career platform for the student following completion of the PhD.

### **Application Process**

To be considered for this PhD, please complete the Joint Studentship application form [available online here](#) and provide a cover letter and CV detailing the nature of your interest in the topic of this studentship and the directions of investigation you would like to consider. Please email these materials to [pg-psychology-admissions@contacts.bham.ac.uk](mailto:pg-psychology-admissions@contacts.bham.ac.uk). Shortlisted applicants will also be required to provide two references.

**Application deadline: Monday 2 March 2020**

### **Midlands Graduate School ESRC DTP**

Our ESRC studentships cover fees and maintenance stipend and extensive support for research training, as well as research activity support grants. Support is available only to successful applicants who fulfil eligibility criteria. To check your eligibility, visit: [www.mgsdtp.ac.uk/studentships/eligibility/](http://www.mgsdtp.ac.uk/studentships/eligibility/)

Informal enquiries about the research or the Birmingham BabyLab, School of Psychology, University of Birmingham prior to application can be directed to [a.j.bremner@bham.ac.uk](mailto:a.j.bremner@bham.ac.uk).