Research Fellow
School of Psychology

Closing date: 24 October 2019
Interview date: TBC
Reference number: PSY031R
Introduction

Applications are invited for a full time Research Fellow position at the University of Aberdeen, UK, to work with Dr Mingyuan Chu and Professor Ben Tatler on a project funded by the Leverhulme Trust looking at the effects of hand gesture on spatial cognition.

Spatial skills are of great importance for solving many everyday tasks. They have also been long recognised as a critical predictor of success in many occupations. Although there is ample evidence that producing gestures can facilitate spatial thinking, the mechanism underlying the gestural benefit in spatial problem-solving remains poorly understood. We will use novel experimental manipulations to test the role of gesturing in spatial information maintenance and attention focusing and to investigate the transferability and durability of the gestural benefit in spatial problem-solving.

Previous research on gesture and spatial cognition are mostly based on response time and accuracy measures. Although these are sensible measures, they cannot reflect on-line cognitive processes. In contrast, eye movements are more fine-grained and sensitive measures of visuospatial attention both in terms of location and time. Here we will use innovative eye-tracking technology to investigate how hand gestures can support problem-solver’s working memory and attention while solving spatial problem.

The proposed research will make significant contributions to our knowledge about the functions of gesture in thinking and learning and will directly address the current debate in psychology and philosophy about the role of bodily action in cognition. The project will also provide an important methodological advance by using eye-tracking method to investigate the gestural benefit in problem-solving. Since spatial skills are highly correlated with academic performance in Science, Technology, Engineering, and Mathematics (STEM), outcomes from this project will have practical implications for the design of learning environments in STEM disciplines.

This position will involve working with Dr Mingyuan Chu and Prof Ben Tatler on a 2-year Leverhulme Trust funded project entitled ‘Giving cognition a helping hand: how gesture facilitates spatial thinking’.
Job description

Main purpose of the role:

The successful candidate will be responsible for preparing programmes and experimental materials, recruiting and testing participants, collecting and analysing eye movement data, coding hand gestures from video recordings, preparing manuscripts, and assisting with the communication and dissemination of the research findings to both academic and non-academic audiences.

Candidates should have experience of using eye movement recording equipment such as the EyeLink 1000. Analysis and programming skills are essential, with experience in Python/Matlab and R highly desirable.

Key responsibilities:

Research Fellow

- Experimental design
- Stimulus generation and experimental programming using Python or Matlab
- Operation of eye movement recording equipment: Eyelink 1000
- Data collection: assessing large number of participants
- Data management and analysis of large and complex eye-tracking studies using R
- Generating novel methods of analysing eye-tracking data
- Co-authoring academic journal articles
- Dissemination of results to scientific meetings and lay audiences
- Developing independent research interests and collaborations
- Awareness and development of research skills to meet the needs of the project and future career
- Team working to organise the complex demands of a large research programme

At a glance

Salary: £33,797 per annum

Hours of work: Full Time

Contract type: Available for up to 24 months
Candidate background

The candidate must have a PhD in Psychology or a cognate discipline.

The ideal candidate will have experience in eye-tracking research, including designing and running eye movement experiments and analysing and managing eye movement data. Numerical proficiency and statistical skills are essential. The research will use Python/Matlab and R; experience with these programmes is highly desirable. Knowledge in gesture, spatial working memory and attention is also desirable.

Terms of appointment

Salary will be paid at the rate of £33,797 per annum on the Grade 6 salary scale.

Any appointment will be made subject to satisfactory references and a 12 month probation period.

As this post is subject to external funding from the Leverhulme Trust it will be available for 24 months.

For further information on various staff benefits and policies please visit [www.abdn.ac.uk/staffnet/working-here](http://www.abdn.ac.uk/staffnet/working-here)

Should you require a visa to undertake paid employment in the UK you will be required to fulfil the minimum points criteria to be granted a Certificate of Sponsorship and Tier 2 visa. As appropriate, at the time an offer of appointment is made you will be asked to demonstrate that you fulfil the criteria in respect of financial maintenance and competency in English. Please do not hesitate to contact Marian Elliot-Jones, HR Adviser on +44 (0)1224 273757 or email m.elliott-jones@abdn.ac.uk for further information.
## Person specification

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<th>Education/Qualifications</th>
<th>Essential</th>
<th>Desirable</th>
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<tr>
<td>Academic, technical and professional education and training</td>
<td>• PhD or equivalent degree in Psychology, Cognitive Science, Neuroscience, Computer Science or cognate discipline</td>
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<th>Work and Other relevant experience (including training)</th>
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<tr>
<td>eg Specialist knowledge, levels of experience, supervisory experience, research</td>
<td>• Experience in the use of eye-tracking equipment</td>
<td>• Knowledge of spatial working memory and attention literature</td>
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<td>• Experience of programming eye-tracking paradigms and analysing the resulting data</td>
<td>• Experience in presenting research to academic, professional and lay audiences</td>
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<td>• Interest in gesture and spatial cognition research</td>
<td>• Successful track record in authorship of research publications</td>
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<th>Personal qualities and abilities</th>
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<td>eg initiative, leadership, ability to work on own or with others, communication skills</td>
<td>• Excellent interpersonal skills</td>
<td>• Ability to communicate complex technical research to lay and expert audiences</td>
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<td>• Ability to work independently and as part of a team</td>
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<td>• Strong statistical skills</td>
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<td>Excellent written skills and oral presentation skills</td>
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<th>Other</th>
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<td>eg special circumstances (if any) appropriate to the role such as unsocial hours, travelling, Gaelic language requirements etc.</td>
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The University

Founded in 1495, Aberdeen is Scotland’s third oldest University and the fifth oldest in the UK. Ranked within the world top 160 in the Times Higher Education Rankings 2019 and named Scottish University of the Year in the Times and Sunday Times Good University Guide 2019. Aberdeen is ‘open to all and dedicated to the pursuit of truth in the service of others’.

Aberdeen is a broad based, research intensive University, which puts students at the head of everything it does. It has significant academic strengths and potential across a wide variety of disciplines. Outstanding in a wide range of discipline areas, Aberdeen has also been credited for its international reach and its commercialisation of research ideas into spin out companies.

The University has over 14,000 matriculated students and 3,600 staff representing 130 nationalities. We encourage bold thinking, creativity and innovation and we nurture ambition with many opportunities for professional and personal development in an inclusive learning environment which challenges, inspires and helps every individual to reach their full potential.

The University combines a distinguished heritage with a forward looking attitude. In the past few years, the University has encouraged creativity in its academic staff, broken new ground with an innovative curriculum, and developed state-of-the-art facilities including the new Sir Duncan Rice Library and the Aberdeen Sports Village and Aquatics Centre. In looking to the future, the University seeks to enhance its reputation as one of the world’s leading Universities by moving forward with ever more ground breaking research; ensuring students have an intellectual and social experience second to none; and capitalising upon the dual role as one of the major institutions of the north and as a cornerstone of regional economic and cultural life.
The city and the region

**Aberdeen and Aberdeenshire**

With a population of approximately 230,000, the city stands between the Rivers Dee and Don. This historic city has many architectural splendours and the use of its sparkling local granite has earned Aberdeen the name of the Silver City. Recognised as the oil capital of Europe, Aberdeen nevertheless retains its old-fashioned charm and character making it an attractive place in which to live.

Aberdeen enjoys excellent communication services with other European cities - e.g. flying time to London is just over one hour with regular daily flights. There are direct air links to London (City, Gatwick, Heathrow, and Luton), Manchester, Birmingham, Leeds, Southampton, Belfast and East Midlands within the U.K. There are also flights to international hub airports: Amsterdam (Schiphol), Paris (Charles De-Gaulle) and Frankfurt as well as flights to other European destinations. [http://www.aberdeenairport.com](http://www.aberdeenairport.com) Road and rail links are also well developed.

The Grampian Region which took its name from the Grampian Mountains has a population of approximately 545,000. It is made up of five districts – Aberdeen, Banff & Buchan, Gordon, Kincardine & Deeside and Moray. The city and the surrounding countryside provide a variety of urban, sea-side and country pursuits. Aberdeen has first class amenities including His Majesty's Theatre, Music Hall, Art Gallery, the Aberdeen Exhibition Centre, Museums, and Beach Leisure centre. Within a short time, beach pursuits, equine activities, salmon, trout and sea fishing, hill-walking, mountaineering, golf, sailing, surfing and windsurfing can be reached. The city and the surrounding countryside are repeatedly given high ratings for quality of life in surveys.

Aberdeenshire is one of Scotland’s most appealing regions. Royal Deeside and the Cairngorms National Park are within easy access of the city, and there are a variety of towns and villages scattered along the coastline.

Aberdeen and Aberdeenshire cater for a wide range of tastes in sporting and cultural activities.

To find out more about Aberdeen and Aberdeenshire go to [www.visitabdn.com](http://www.visitabdn.com)
How to apply

Online application forms are available at www.abdn.ac.uk/jobs

The closing date for receipt of applications is **24 October 2019**

Should you wish to make an informal enquiry please contact
Dr Mingyuan Chu
01224 273940
mingyuan.chu@abdn.ac.uk

Please do not send application forms or CVs to Dr Mingyuan Chu

**Please quote reference number PSY031R on all correspondence**

*The University pursues a policy of equal opportunities in the appointment and promotion of staff.*