Royal Holloway Travel Award and Santander Travel Award Report

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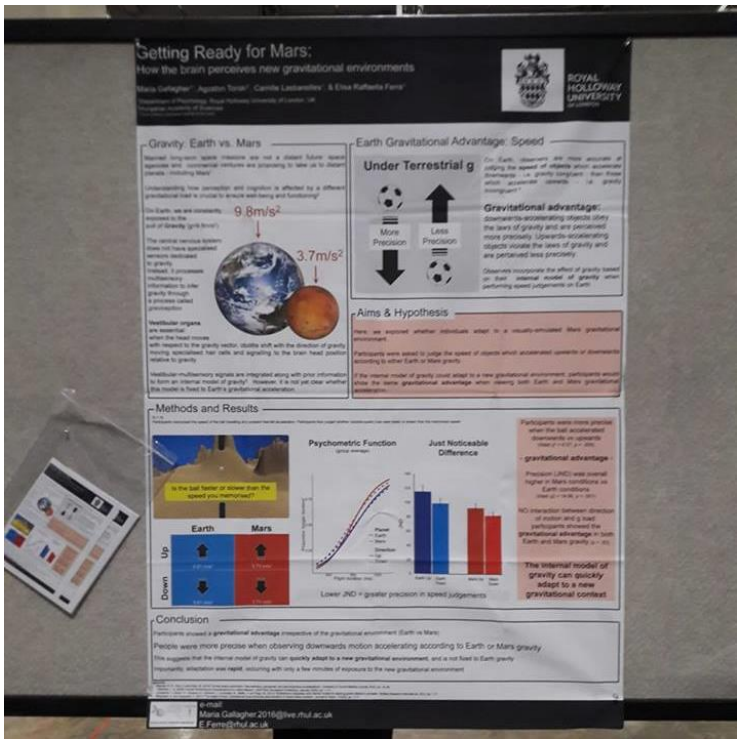
In March 2018 I was supported by the Royal Holloway University of London and Santander Travel Awards to attend the Cognitive Neuroscience Society (CNS) 2018 conference in Boston, Massachusetts. The CNS meeting involves over 1,500 academics working within the domain of Cognitive Neuroscience and presents the latest findings within the field. I am extremely grateful to have received these awards to enable me to attend this multidisciplinary meeting.

My PhD focuses on the integration of vestibular and visual signals to enable us to perceive the world around us. Specifically, I investigate how vestibular-visual interactions allow us to perceive gravity. As part of my conference attendance, I presented a poster showcasing my lab's work on how the brain adapts to altered gravitational environments ("*Getting Ready for Mars: How the Brain Perceives New Gravitational Environments*"). Gravity is a perceptual signal which is "always on"; the vestibular receptors continually sense the pull of Earth's gravity, however we do not necessarily consciously perceive this. Online sensory signals from the vestibular system, proprioception, and vision are integrated with prior information about the effects of gravity to form an internal model which can guide perception and behaviour. However, whether this internal model is able to adapt to new gravitational contexts is unknown. In our research, we have found that participants were able to quickly adapt to a visually-simulated Mars gravitational environment. These results suggest that the internal model of gravity is not fixed to Earth's gravity, but could be flexibly applied to new gravitational contexts. This finding is particularly relevant given that both space agencies and commercial enterprises are looking towards manned travel to Mars within the coming decades.



Presenting this work enabled me to gain valuable feedback from researchers from different areas of Cognitive Neuroscience, something which has been useful when thinking about follow-up experiments and the future presentation of our work. I also had the opportunity to connect with other researchers from within the field of vestibular cognition, and to hear about the work that they were conducting in their respective labs. This aspect of conference attendance is particularly important, as it may open doors for future career prospects, as well as increasing the visibility of our own lab's research.

In addition to presenting my own work, I also attended several symposia and workshops during the conference. For example, I attended a symposium focused on how we can use EEG (a type of neuroimaging which enables us to record electrical brain activity) to investigate the integration of multisensory signals when people perform actions. I found the symposium very interesting, and it has given me an insight into how I could apply EEG during future studies in my PhD. I also attended the Trainee Professional Development Panel. This gave an interesting overview of potential career pathways for PhD students in Cognitive Neuroscience, whether inside or outside of academia. While a career in academia is my ultimate aim, it was very useful to get a broad sense about which alternatives I might also find interesting and enjoyable beyond academia.

Overall, the conference was a fantastic experience, giving me the chance to present my work to an international community of researchers, to network with scientists who share my research interests, and to hear about contemporary research which will be useful in planning future studies during my PhD. Away from the conference, I also had the chance to visit Boston. This was my first trip to the USA, so I was pleased to have some 'down-time' from the conference and to see the city! In particular, visiting both MIT and Harvard was inspirational, and a nice insight into how universities in the US differ from those in the UK. I also visited Harvard's Warren Anatomical Museum to see the skull of Phineas Gage, a patient whose brain injury was considered pivotal for the idea of localisation of functions within the brain. The case of Phineas Gage is presented in almost every undergraduate course, and indeed was a key introduction to neuroscience in my own studies, so being able to visit Gage was a poignant moment in the trip.

None of this would have been possible without the generous support of the travel awards, so my thanks go to everyone involved.