Welcome to our ever increasing numbers of new members, and thank you to all our families who have helped our researchers carry out their studies. Some of our ongoing studies are described below, so go to the website and sign up for these and more. Wishing you a happy and safe festive season.

Brain Imaging and Decision-Making of Teenagers

Why is it that a patient with obsessive-compulsive disorder cannot decide not to check or count or wash?

This is a key question when identifying new treatments for obsessive-compulsive disorder (OCD). We don’t know the answer … yet. Evidence from adults with OCD indicates over-active habitual actions. We are using brain imaging methods to investigate if the active brain circuits responsible for decision-making in teenagers are different to teenagers without OCD.

To do this we are now recruiting healthy teenagers. We can’t do this without you. If you would consider helping us out please check out the Neuronauts website or contact Iain Perkes (iain.perkes@sydney.edu.au)

Language understanding and production in young children

The Language Acquisition group at the ARC Centre of Excellence in Cognition and its Disorders (CCD) are investigating language understanding and production in children.

Recent research has found that 4- and 5-year-old children show different understanding of the words “and” and “or” from adults. For example, adults tend to interpret a sentence like “John has an apple or an orange” as suggesting that John has either an apple or an orange, but that he does not have both. Children, on the other hand, can interpret this sentence as meaning that John has both an apple and an orange. In order to gain greater insight into children’s understanding of such words, we are now looking at how even younger children understand sentences containing these words.

We are also looking at the normal stages of language development that children pass through in acquiring negation by investigating how young children produce positive and negative sentences in the past tense. As adults, we can say “The boy jumped” or “The boy didn’t jump over the box”. Children take a while to acquire “ didn’t,” however, so we are interested in finding out what they say before they have learned this form. Do they say “Big Bird not jump” or “Big Bird not jumped”, for example?

If you and your children might like to take part in these studies, please have a look on the Neuronauts website, or get in touch with Elena D’Onofrio (elena.donofrio@mq.edu.au).

New email alerts

We are starting a new initiative to make it easier for you to become aware of studies that your family is eligible to take part in. An email alert will be sent to you when a new study is listed for which your family is eligible. It will list the name and a very brief description of the study. Opting out: Each email alert will have a single-click opt out option at the bottom, so if you would like to stop receiving the alerts, simply click on this.

Brain spikes and gaming EEG systems!

When your brain notices a sound or a sight, we can measure a tiny electrical spike of activity of the neurons. This is called an ‘event related potential’ or ERP and there are specific ERP patterns that occur when people hear a sound or see a face.

ERP research is usually done using medical- or research-grade EEG equipment. EEG stands for electroencephalography. To do this, we put little sensors on the head. Recently a company has created an EEG system especially for people who play video games. It was designed so that gamers can use their brain waves as another input device just like a keyboard or mouse. Many Neuronauts have contributed to our previous research that has demonstrated that this gaming EEG system produces research quality data for simple auditory and visual experiments. Thanks for all your help!

In the future, we’ll be testing whether the gaming EEG system works for different types of stimuli. If this sounds interesting to you, please look for our project on the Neuronauts website in early 2016 or register your interest with Nicola (nicola.filardi@mq.edu.au).

Nic Badcock, Nicola Filardi, and Alex Woolgar