

# STAMMA RESEARCH ARENA

Saturday 20<sup>th</sup> September 2025

**Project 1:** How can we make the best use of MRI videos of stammering and AI

*Speaker – Michel Belyk*

I am Dr Michel Belyk and am a Senior Lecturer in Psychology at Edge Hill University. Through my research, I try to understand why our species can talk. I study the human voice, all the things that it says, and how it is able to say them. Some of this research includes studying the human brain, and one of the best ways to do this is to study brains that develop to talk differently, like stammering. Through this research, I have become interested in developing ways for neuroscientists to become better allies to people who stammer.

*Project outline*

Real-time MRI is a non-invasive technology for taking videos of the inside of the mouth and throat. It can be used for a variety of purposes including studying the movements of speech. It is rather expensive kind of data to collect and so far the methods for working with the data are very labour intensive. This means that datasets tend to be small, and very rarely (I think maybe only once ever so far) focusing on stammering. We propose to 1) extend current methods using AI to make working with larger datasets possible and 2) collect a large dataset of real-time MRI videos specifically from people who stammer. (for a quick look at what these videos are like go to [https://sail.usc.edu/span/rtmri\\_ipa/db\\_2015.html](https://sail.usc.edu/span/rtmri_ipa/db_2015.html) and click any of the speech sounds in chart.

*Questions I'd like to bring to the audience*

1. What concerns would you have over how a dataset like this is shared? Should it be completely open to make stammering more visible, or restricted to researchers to guard against misuse?
2. The videos look cool! I think there is potential to use of this as powerful engagement/advocacy material. What kinds of messages would you like this amplify?
3. Are there any other types of data that you think would help us make sense of what we see? So far the obvious things seem like audio so we can analyse and transcribe speech. Is there anything else, maybe about lived experience, speech sounds or words that are most likely to trigger a specific persons stammer?
4. What could a project like this do to make itself as useful as possible to the excellent social justice/advocacy efforts that are already growing out of the stammering community?

## **Project 2:** How can we create a strong advisory board for our research project?

*Speaker – Mahmoud Elsherif*

Mahmoud Elsherif is a Research fellow, researching metacognition and memory function in education, particularly in the contexts of stammering and dyslexia. They are more broadly involved in neurodiversity research exploring how neurodiversity and open scholarship can support one another.

### *Project outline*

Metacognition is your awareness of your own thinking and memory processes. This research project aims to investigate how metacognition and memory function in adults who stutter and dyslexic adults.

The study will explore the relationship of metacognition and memory function to cognitive performance, especially in education. With cuts within education and support for pupils, we need to find better ways to help children who stutter and dyslexic children do better in education. Some education strategies include reciting information aloud to aid memory. Yet such strategies can place a lot of pressure on children who stutter, and expose them to greater risk of bullying and teasing. So this study will explore written rather than spoken production. especially due to teasing and bullying, we want to focus on written production.

To help us make this project design as good as it can be, we want to discuss the creation of an advisory board with the Research Arena audience. We want to get your ideas and insights into what factors might help our advisory board work most effectively.

### *Questions I might bring to the group*

- If you were a member of the advisory board, what information do you think you would need to do your role well?
- Do you think we should have separate meetings for members of the advisory board who stammer and those who have dyslexia? Or should we mix them?
- What factors do you think will make it more or less likely that people will join the advisory board?
- How could we make the advisory board role appealing?
- Is anyone here interested in joining the advisory board?