Greetings from our active and growing research programme!

Thank you to all the people with and without aphasia who have participated in our research this year!

Our mission is to better understand the impairments of people with aphasia and to enable more effective treatments.

For example, problems with word retrieval in aphasia are common, but we know they can be improved with treatment. This year we spent some time investigating why this is possible.

First, we have been looking at how well people with aphasia learn new words – because if words are lost in aphasia, then they will have to be relearned.

Another possibility is that perhaps the words are still there but are just hard to recall. So our second investigation looks at whether the mechanism for making words easier to recall with practice works the same way in people with and without aphasia.

We’ve also begun examining how aphasia affects people who speak more than one language.

Ultimately, we hope that our findings in areas like these will help us develop better treatments for people with aphasia.

We hope you enjoy reading more about our work!

What Do We Do?

Develop theories

- Develop and refine a ‘map’ of the stages and processes people use to understand and produce language

Understand language impairments

- Use this map to help us understand why people with aphasia have trouble with certain aspects of language

Develop and evaluate treatment

- Develop better treatments based on this understanding

Help Wanted

Are you interested in helping us learn more about aphasia and develop effective treatments?

We are currently looking for:

- Bilingual people with aphasia
- People with aphasia who are interested in learning about meditation
- Anyone with aphasia who would like to help us out!

If you or someone you know might be interested in helping our research by participating in a study, please contact:

Professor Lyndsey Nickels
lyndsey.nickels@mq.edu.au
(02) 9850 8448

If you do not have aphasia and still want to help, you can sign up to our Adult Database and participate as a control subject at ccd.edu.au/registers.
How does treatment improve word retrieval in aphasia?

This year we’ve just completed the testing phase of a study looking at aphasia word finding treatments, trying to figure out what treatments work and why.

Two possible mechanisms could account for positive treatment effects: priming (single prior exposure) or word learning (repeated exposure builds representations that are retained through learning). In this study, each individual participated in a series of experiments each focusing on a different possible mechanism as well as a period of treatment.

This will allow us to look at the extent to which priming and/or word learning abilities predict response to word retrieval treatment. In addition, we will systematically investigate any relationship between priming, learning or response to treatment and general cognitive abilities such as memory and attention. We’ll be moving on to the next phase in 2015, so stay tuned!

New tests launched!

People with aphasia often have problems in producing nouns with the correct singular and plural form corresponding to intended meaning. In an effort to identify the level of language processing at which these impairments are occurring, we have developed the English ‘Battery for Assessment of Plural Processing in Aphasia’ (BAPPA). This diagnostic test assesses the ability of people with aphasia to appropriately produce number marking (singulars and plurals) in word production.

There are two versions of the BAPPA – one assessing frequency, and the other assessing regularity. Both batteries are now available for clinicians and researchers for free download via the Macquarie Online Test Interface (MOTif) at motif.org.au.

Spelling Treatment Study

In an attempt to better understand how the spelling system works, PhD student Trudy Kragenbrink conducted a treatment study with two individuals who had severe spelling problems after experiencing a stroke. Both individuals had difficulty holding letters in memory before writing them. So when they tried to spell words, letters would be swapped or missing. Following the treatment, both individuals showed better spelling on the words they had practiced, but unfortunately words that weren’t practiced didn’t improve. It also seems that continued practice of the words would be necessary to maintain the improvement for people with this kind of spelling problem.

Treatment studies are time-consuming projects. We would like to thank the participants and their partners for the commitment and dedication that made this study possible!

Constraint-Induced Aphasia Therapy

As part of her Master’s thesis, speech pathologist Inga Hameister visited to conduct research in constraint-induced aphasia therapy as an approach to improving language performance in people with primary progressive aphasia.

The participants in the study, who were only allowed to use spoken language to complete tasks, achieved significant improvement in word retrieval as well as in grammatical correctness and completeness for trained items. There was also some improved language performance for untrained material.

Inga will be joining the group as a PhD student in 2015. Her work will start from these findings and will investigate further modifications of language therapy approaches in primary progressive aphasia.
Member Spotlight: Dr Shiree Heath

How long have you been a part of the Aphasia Research Group?

I joined the Aphasia Research Group at Macquarie University in February 2013. Prior to that time I was based at the University of Queensland’s Language Neuroscience Laboratory in Brisbane.

What sort of research do you do?

We know that most people with aphasia improve after treatment, but we don’t know why. My current research aims to find out how successful word retrieval treatments work in the brain. I am also involved in new research looking at the effect of meditation on language recovery.

Could you share some career highlights?

Between 2007 and 2009, I worked in a voluntary capacity for the Australian Aphasia Association. During this time I gained valuable insight into the ‘real’ aphasia – how it affects individuals and their families, carers and friends on a day-to-day basis, outside a laboratory setting. This helped me focus on improving the impact and outcomes of my research.

In 2011, I won a video contest that allowed me to create an information source specifically for children and raise awareness about aphasia generally. My short animation, “The Treasure Hunt” aimed at 8-12 year olds, told the story of a young boy who goes on a quest to find his grandfather’s ‘buried’ words, much like a treasure hunt.

You can watch the video here: 
youtube.com/watch?v=Gq12cMUZPg4

“Aphasia In Two Languages

When a person who speaks two languages acquires aphasia, this is known as bilingual aphasia.

While bilingual aphasia can make treatment challenging, bilingualism can also be used as a tool in aphasia recovery. One language can be used to support the other.

Did you know…

• Both languages may be affected to different extents
• Both languages may mix together when spoken in ways that would not have occurred before the aphasia
• The language that is more preserved may not be the first language learned or the language spoken more frequently
• As function is regained, one language may improve more than the other

Sharing Knowledge with Teachers in China

Though China does not have a speech pathology profession, there is interest in the cognitive neuropsychological approach to addressing language difficulties. In July, Dr Britta Biedermann visited the Beijing Haidian Special Education School in China and spoke with special education teachers about models of language assessment and implications for language remediation.
Trophy Time

Professor Lyndsey Nickels was awarded multiple distinctions this year for her excellence in research and in supervision of higher degree research students.

These included being elected as fellow of the Academy of Social Sciences in Australia and receiving both the Faculty of Human Sciences and the Macquarie University Excellence in Higher Degree Research Supervision Awards.

Dr Nora Fieder successfully complete her PhD this year, but she also received an official Commendation for Academic Excellence for her PhD work.

Congratulations Lyndsey and Nora!

Caregiver Shares her Story

Shirley Rutherford’s late husband Boyd suffered from Primary Progressive Aphasia (PPA). Shirley spoke about her experiences to an audience of geriatricians, speech pathologists, Alzheimer’s Australia Care workers and researchers at a forum held at War Memorial Hospital in Sydney in November.

She decided to write and publicly speak about the journey she and her husband shared in the hope that hearing about it might be helpful to other people with a family member who has PPA, and provide clinicians and researchers insight into the PPA journey. Her account has been included in a special issue of the international journal Aphasiology, edited by Lyndsey Nickels and Karen Croot, which will soon be published as a book titled, Clinical Perspectives on Primary Progressive Aphasia.

A copy of Clinical Perspectives on Primary Progressive Aphasia can be ordered by contacting Lyndsey Nickels at lyndsey.nickels@mq.edu.au.

Coming Up in 2015

Aphasia Therapy for Bilingual People

Some words (homophones) sound the same but have different meanings, like ‘knight’ and ‘night’ or ‘cricket’ the insect and ‘cricket’ the game. Our recent research has given us evidence that the pronunciations of these homophones are stored together in the brain.

Now that we have established this, we can investigate if aphasia therapy targeting improvement in one meaning of a word will also yield improvement for the other homophone meaning. We can also investigate if there is cross language improvement due to therapy in people who are bilingual. This would be a major breakthrough both in understanding how our mind represents words and also in helping us find the most effective ways to conduct bilingual aphasia therapy.

Therapeutic Potential of Meditation

Having completed a pilot study, we are now ready to move on to the next phase of our research into the effects of meditation training on auditory attention, memory and spoken language and its potential for use in remediation for people with aphasia.

PhD Students

This coming year, Trudy Krajenbrink, Anastasia Romanova and Vishnu Nair will be submitting their theses to complete their PhDs. Also, this year we will welcome Dr. Teresa Schubert and Inga Hameister to the team. Dr Schubert’s research focuses on reading and spelling, and Inga will be joining us in September as a new PhD student working on a group therapy for improving spoken communication in people with progressive aphasia.