

## Assessing the benefits of multimodal rehabilitation therapy in aphasia

Dr Stephen Welbourne & Dr Karen Sage

The Neuroscience and Aphasia Research Unit invite applications for the following EPSRC PhD studentship. The project is due to commence October 2010 and will attract full fee support and an annual stipend of £19,490. Funding is limited to UK/EU nationals only due to EPSRC eligibility requirements.

Parallel Distributed Processing (PDP) is a form of computation where a large number of processing units performing simple calculations can be employed all together to solve much more complex problems. Perhaps the best example of this is the human brain, which contains approximately one hundred billion neurones.

PDP modelling work suggests that efficiency on multiple task problems may be critically related to the economy of the representations that are developed to support those tasks. One area where this observation is likely to be crucial is language where a number of related linguistic tasks (speech, comprehension repetition and reading) may all be supported by the same set of representations. If the representations used to support spoken comprehension are similar to those that support reading then the model would be expected to perform well. However, if it uses different representations to support these tasks it may be less efficient at both. This could be important in therapy where representations have to be re-learned.

This part of the project aims to combine theoretical work on developing large scale models of language processing with clinical data focusing on recovery and rehabilitation. The aims for this studentship will be:

- To develop a framework for delivering effective multimodal therapies for people with aphasia
- To evaluate these therapies against standard unimodal therapy
- To compare the results with the predictions of a computational model

The study forms part of a wider research effort to understand how the brain supports language function, how this breaks down after brain damage and the mechanisms that support recovery/rehabilitation. This will require a model of language that is capable of simulating speech, repetition, comprehension, naming and reading. The project would be ideal for a speech and language therapist with interests in aphasia.

Applicants should hold, or expect to obtain, a minimum upper-second honours degree (or equivalent) in speech and language therapy and be registered with the Health Professions Council. Previous experience of delivering speech and language therapy to people with aphasia is essential.

Please direct expressions of interest in the following format to either Dr Stephen Welbourne ([stephen.welbourne@manchester.ac.uk](mailto:stephen.welbourne@manchester.ac.uk)) or Dr Karen Sage ([karen.sage@manchester.ac.uk](mailto:karen.sage@manchester.ac.uk))

- Covering statement (750 words maximum) outlining your suitability and motivation for the study.
- Academic CV
- Two academic references (only one of which can be provided by proposed PhD supervisor)

Applications are invited up to and including **Monday 5 April 2010**.

<http://www.psych-sci.manchester.ac.uk/naru/>