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ARC CENTRE OF EXCELLENCE IN
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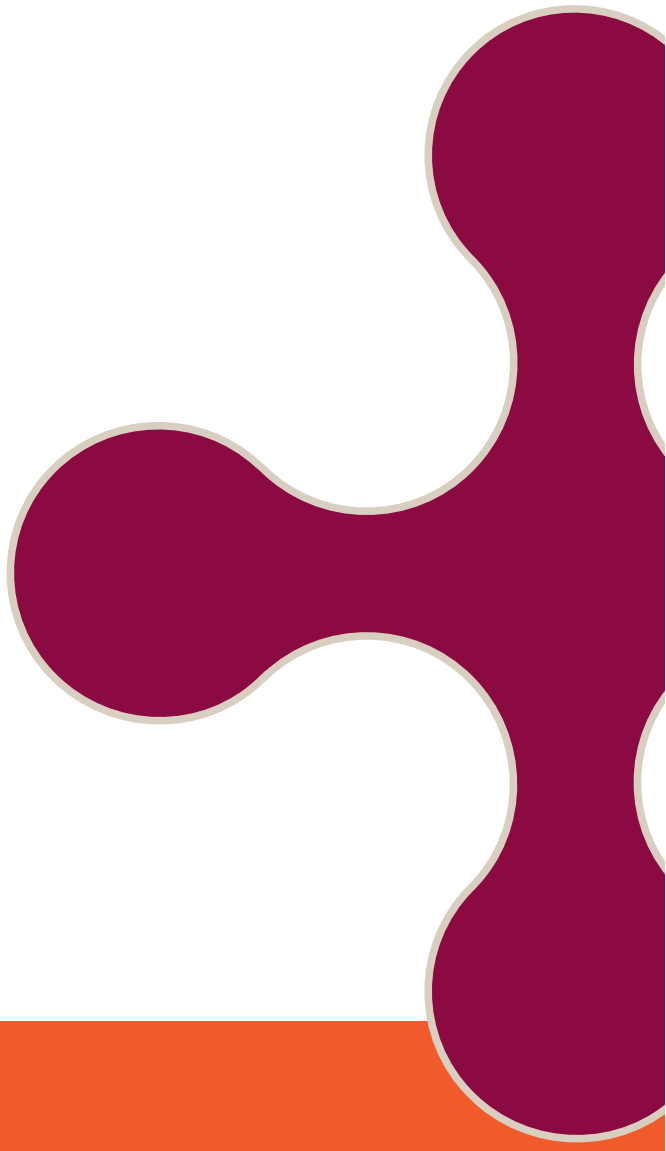

# 2011 ANNUAL **report**

# ARC CENTRE OF EXCELLENCE
*in Cognition and its Disorders*

2011 ANNUAL **report**

ARC CENTRE OF EXCELLENCE IN COGNITION AND ITS DISORDERS

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# DIRECTOR'S *Report*

*As you read through this Annual Report, you will bear witness to all that we have accomplished in the first year of the Centre.*

It gives me great pleasure to present the first Director's Report for the ARC Centre of Excellence in Cognition and its Disorders (CCD). In just 12 months, our Centre has developed from separate teams of researchers at fourteen Universities, into a large and cohesive Centre with over 80 researchers and 20 newly recruited higher degree research candidates. Of particular note, this year we successfully appointed 15 postdoctoral researchers to the CCD from around the globe: Nicholas Badcock, Glenn Carruthers, Rochelle Cox, Adelaide de Heering, Chris Hoon, Chiara Fiorentini, Linda Jeffery, Nadine Kloth, Susan Lin, Eva Marinus, Pamela Marsh, Vincenzo Moscati, Serge Robidoux, Karen Smith-Lock and Rachel Tan.

During the year, we received critical guidance from an Advisory Board with a combination of academic and peak body representatives, and from a Scientific Committee with prominent international scholars. We were particularly pleased to note that one of our Scientific Committee, Emeritus Professor Noam Chomsky, was awarded the 2011 Sydney Peace Prize. During his visit to Australia, Emeritus Professor Chomsky took time out from his schedule of talks and interviews to meet with CCD researchers and students.

As you read through this inaugural annual report, you will bear witness to the quality of our research investigators, our visiting scholars, our postdoctoral researchers and students, and to the seminars, conferences and workshops that our Centre has hosted during its first year. We have held a series of active research seminars across our three nodes, and we have hosted a stellar list of visiting researchers and students. Among the special events, I would highlight the CCD Inaugural Workshop and the CCD Annual Workshop. These workshops were designed to promote interactions among researchers across the three nodes, and to provide the groundwork for new collaborative research programs. Our administrative team has sought innovative ways to support interaction and collaboration among Centre researchers across programs, and across the three nodes of the CCD. This includes a new funding scheme to offer financial support to cross program projects in 2012. This scheme is designed to bring together new teams of researchers from across our five programs, facilitating additional opportunities for collaboration between our researchers.

I take this opportunity to single out two individuals for special recognition. First, I wish to thank Emeritus Professor Max Coltheart for his outstanding and inspirational leadership, both as Director of the Macquarie Centre for Cognitive Science, and as a Chief Investigator and Program Leader at our Centre of Excellence. Cognitive science in Australia has achieved the international reputation it now enjoys due in large part to Max's vision, encouragement and mentoring, as well as to his personal achievements. Although Max officially stepped down from the role of Program Director for the Belief Formation Program in January 2012, he continues to contribute to the Centre as a Chief Investigator.

Finally, I would like to say a few words in memory of Emeritus Professor Roger Wales of La Trobe University. Roger was instrumental in the success of the ARC Centre of Excellence application and in the interview process, and he was a close friend. Roger believed that cognitive science transcends the limiting biases of the specific disciplines that investigate the properties of the human mind. His overarching goal was to provide a comprehensive understanding of the human mind and its disorders. We will try to embrace this goal as we set our research agenda in the years ahead. Roger's significant contributions to cognitive science and to our Centre will be greatly missed.

The mission of the Centre is to coordinate research in cognitive science so that theories of cognition can inform the assessment and treatment of cognitive disorders. Now, with the first year behind us, we look forward to further outstanding achievements toward this goal, by our researchers, postdoctoral fellows and students, all made possible by the administrative, financial, and intellectual support of the ARC Centre of Excellence in Cognition and its Disorders.

**Stephen Crain**
Director | February 2012

# CENTRE *Overview*

*The mission of the Centre is to coordinate research in five areas of cognition: belief formation, language, memory, person perception and reading.*

ARC Centres of Excellence are prestigious research hubs in which experts from across the nation work in collaboration to extend Australia's international standing in areas of national priority. The ARC Centre of Excellence in Cognition and its Disorders (CCD) offers unique opportunities for interdisciplinary and international collaborative research in the study of cognition, its disorders and their treatment. The ARC Centre of Excellence in Cognition and its Disorders was established in January 2011 and officially launched in February 2011. Under the ARC Centres of Excellence scheme, the CCD will receive $21 million from the Australian Research Council across seven years (2011-2017).

The mission of the Centre is to coordinate research in five areas of cognition: belief formation, language, memory, person perception, and reading.

The five CCD research areas, belief formation, language, memory, person perception, and reading, were chosen because they are well-understood from a theoretical point of view and because Australia has outstanding researchers in these areas. Starting with the expertise of these prominent Australian researchers, the CCD will draw on the additional expertise from our partner investigators from around the world. The Centre will integrate and coordinate research so that formal theories of human cognition can inform studies of cognitive processing using neural imaging techniques, as well as the assessment and treatment of cognitive disorders. Just as important, the findings from these studies of neural imaging and from assessments and interventions in cognitive disorders, will be used to advance cognitive theories.

The Centre's interdisciplinary research teams will tackle several basic questions in cognitive science, and will implement intervention programs that will inform educational policy and clinical practice, with considerable potential impact for the health and social well-being of Australia. The five research programs will directly inform the diagnosis and treatment of a range of cognitive disorders, including dyslexia, specific language impairment, autism, dementia and schizophrenia. Finally, the Centre will further enhance Australia's international reputation in the study of cognition and its disorders.



## Structure

The ARC Centre of Excellence in Cognition and its Disorders brings together an extensive network of Australian and international research collaborators. The five collaborative research programs, which have been identified as CCD concentrations of research, each involve numerous research staff and students, and are administered at three Centre nodes and at a host of collaborating institutions. The central node of the CCD is Macquarie University, with additional nodes at the University of New South Wales and at the University of Western Australia. There are two other Australian collaborating institutions, the University of New England and the University of Sydney. Plus, the CCD includes nine partner institutions from around the world: the University of Auckland, New Zealand; the University of Oxford, UK; MRC Cognition and Brain Science Unit, Cambridge, UK; Cardiff University, UK; the University of Hong Kong, Hong Kong; Institute of Education, University of London, UK; Royal Holloway, University of London, UK; the University of Kansas, USA; and the University of York, UK.

## Governance and Management

Centre Director, Distinguished Professor Stephen Crain, is responsible for scientific leadership and strategic direction of the CCD. The Chief Operations Officer is responsible for the operational management of the CCD. The CCD Research Management Committee is comprised of the Director, the Chief Operations Officer, and the Program Leaders. This Committee is responsible for the Centre's goals, policies, and performance indicators. The progress, future directions and outreach activities of the CCD are reviewed by an international Scientific Committee comprised of eminent scholars in cognitive science, and by an Advisory Board with representatives from academia and key community/advocacy organisations.

# PROGRAMS

## Belief Formation

*Program Leader | Professor Max Coltheart*

This program investigates the cognitive and brain systems underlying our ability to formulate and test beliefs about the world, with special reference to disorders of belief formation, such as delusion in schizophrenia and in dementia. Our approach to delusional belief is based on the two-deficit account that has been developed over the past decade by Coltheart, Langdon and colleagues. According to this account, for delusional beliefs to arise, the delusional person must be suffering from two distinct neuropsychological deficits. The first is an impairment of perceptual or cognitive processing which leads to the delusional idea first occurring to the person. The second factor is an impairment of the belief evaluation process which we normally use to reject bizarre or unsubstantiated beliefs, but which the deluded person fails to do. One stream of our research program involves identifying the different 'first factors' that cause different delusional themes. Another stream of our research involves developing a better understanding of the second factor that disrupts normal belief evaluation, including identifying the brain regions that normally sustain this ability. Our cognitive theory of delusional belief also suggests that cognitive behavioural therapy is an effective treatment for delusional belief and other psychiatric symptoms, such as hallucinations, regardless of the aetiology (schizophrenia, delusional disorder, head injury, etc.). So in a third line of research we are collaborating with practitioners of this form of therapy, and with clinicians who use cognitive remediation, in the design, execution and evaluation of psychological treatments for different psychiatric symptoms.

## Language

*Program Leader | Professor Stephen Crain*

This program investigates the development of language in normal children and adults, and in children and adults with language disorders (e.g., specific language impairment (SLI), aphasia). Language is crucially used to understand logical inferences, so one program central to understanding normal and SLI children is to investigate how they come to comprehend and use expressions that convey logical relations, and to identify the associated neural markers of these milestones using the brain imaging technique, magnetoencephalography (MEG). We are conducting an extensive SLI project, taking advantage of the research teams' considerable expertise in different domains of language, by concurrently investigating three subtypes of SLI: grammatical-SLI, phonological-SLI, and pragmatic-SLI. These various forms of SLI are often treated as unrelated. Using MEG, the commonalities and differences can be examined directly. In addition to studies of normal language development and developmental disorders of language, theories of adult language processing can be refined and tested by studying adults with acquired language impairments (aphasia; progressive language impairment) and these theories are used as the basis for cognitively-based intervention studies.

## Memory

*Program Leader | Professor John Hodges*

This program investigates the cognitive systems and brain structures underlying various forms of memory, including autobiographical memory, episodic memory and semantic memory. The program uses experimental neuropsychological methods, as well as structural and functional brain imaging, in both normal subjects and in patients with progressive brain pathologies such as dementia. Despite sustained research interest spanning 50 years, the cognitive and neural architecture of episodic and semantic memory systems and the factors that affect their optimal functions, are still not fully understood. We have three research projects. First, we are investigating the cognitive and neural factors that influence rates of forgetting of new information. Our second project investigates the role of frontal and temporal lobe structures and longitudinal changes in the interactions between memory systems. Finally, the third project attempts to characterise deficits in the capacity to imagine future events in the dementias.

## Person Perception

*Program Leader | Professor Gillian Rhodes*

This program investigates person perception – the extraction, processing and use of information about other people. Person perception expertise is critical to guiding everyday social interactions and is highly developed. Subtle cues to identity, gender, ethnicity, age, attractiveness, emotional state and focus of attention are effortlessly read from the face, body and voice. This fluency is remarkable given the difficulty of the discriminations required. We are focussed on understanding the perceptual, cognitive, neural and evolutionary mechanisms underlying this impressive expertise, and how these mechanisms emerge through development. We also study how these mechanisms might develop and function differently in neurodevelopmental disorders such as autism and developmental prosopagnosia (also known as congenital prosopagnosia) and in individuals with early visual impairments resulting from congenital cataracts. A long-term goal is to develop effective interventions to enhance person perception, and ultimately, social functioning and quality of life in individuals.

## Reading

*Program Leader | Professor Anne Castles*

This program uses theoretical models of reading as the basis for investigating how children learn to read, why some children have so much difficulty (developmental dyslexia), and how such difficulties are best treated. These models are applied to the understanding and treatment of the different kinds of reading disorders that are seen in formerly skilled readers after brain damage (acquired dyslexia). The neural basis of both normal and impaired reading can be investigated using brain-imaging techniques such as event related potentials (ERP) and MEG. We also explore new ways of using these techniques to examine changes in neural processing after cognitive intervention. One project is the detailed investigation of subtypes of developmental dyslexia that occur at the earliest stages of the reading process, referred to as peripheral dyslexias. We are developing specific tests to identify the subtypes, document their prevalence in a large sample of children with developmental dyslexia, and explore the cognitive profiles of children identified with particular types of impairment. Another project uses the novel methodology of spectral analysis in ERP and MEG to examine neural changes before and after reading intervention in developmental dyslexia. Our findings inform educational practice and the development of targeted treatment programs for children having difficulty acquiring reading skills.

# RESEARCH

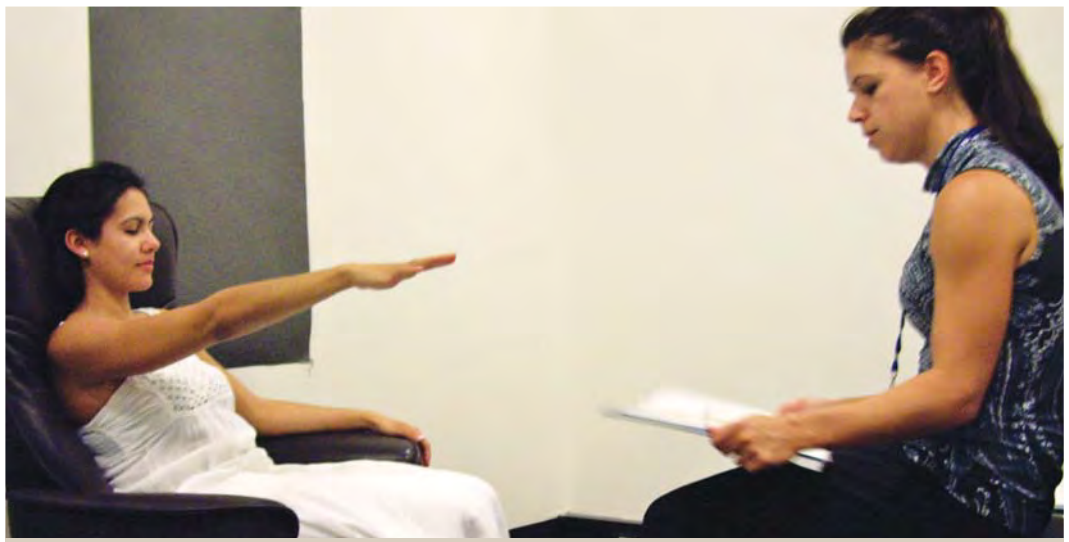
## Belief Formation Program

### Hypnosis research

**Amanda Barnier, Rochelle Cox, Michael Connors, Vince Polito, Jocelyn Elliott, Robyn Langdon, Max Coltheart, Emily Connaughton, Martha Turner (University College London, UK), Nora Breen (Royal Prince Alfred Hospital) and Lisa Bortolotti (University of Birmingham, UK)**

Our research focuses on the nature of hypnosis (e.g., feelings of control during hypnotic suggestions), and the use of hypnosis to model a variety of clinical conditions such as delusions and confabulations. Delusions and confabulations are pathological forms of belief and memory which are seen in a variety of neuropsychological and psychiatric conditions, such as dementia, stroke, and traumatic brain injury. The scientific study of delusions and confabulations has proven challenging because they typically co-occur with other clinical symptoms and impairments. One way that researchers at the CCD Hypnosis Laboratory address this difficulty is by using hypnosis to model these conditions. This use of hypnosis allows us to create "virtual patients" with temporary, reversible psychological disturbances.

Hypnosis is ideal for modelling delusions because both delusions and hypnotic experiences are believed with conviction, are maintained despite evidence to the contrary, and are experienced as involuntary and compellingly real. Further, during hypnosis, people evaluate their experiences less critically than they do otherwise, making them essentially deluded about the real state of the world. We have used hypnosis to develop a laboratory analogue of clinical confabulation, which involves the production of distorted or fabricated memories about oneself and the world. We have used hypnosis to model delusions such as mirrored-self misidentification (the delusional belief that I see a stranger when I look in the mirror), somatoparaphrenia (the delusional belief that one of my limbs belongs to someone else), alien control (the delusional belief that my actions are being controlled by someone else), erotomania (the delusional belief that I am loved from afar by someone), and Fregoli delusion (the delusional belief that strangers are known people in disguise). In summary, hypnosis is a useful tool for investigating clinical conditions such as delusions and confabulations in the laboratory. Our hypnotic models can recreate features of these conditions in ways that are strikingly similar to clinical cases.



*The Hypnosis Laboratory*



### Delusional belief

**Robyn Langdon, Max Coltheart, Robert Ross and Oren Griffths**

Since the beginning of this century, Associate Professor Robyn Langdon and Emeritus Professor Max Coltheart have been developing a cognitive-neuropsychiatric theory intended to explain how various types of delusional belief arise. Consider as an example the Capgras delusion (the belief that someone emotionally close to the deluded person – that person's wife, for example – has been replaced by a complete stranger who looks very like the missing wife). According to the proposed theory, any delusion – including this one – can be explained if we can discover the answers to two questions. First: what caused the delusional idea to occur to the deluded person in the first place? Second: granted that the delusional idea is bizarre, and all of the patient's family, friends and clinicians insist that this idea is false: why, then, does the patient nevertheless adopt it as a belief, and continue to insist that it is true?

The first question is: How is the delusional thought triggered? We propose the following answer. Seeing a familiar face (e.g., a spouse) evokes a strong response in the autonomic (emotional) nervous system. Three studies have shown that this response does not occur in people with Capgras delusion (because of specific neuropsychological impairment). How could such people explain the absence of the emotional response they expect when they see someone who looks just like their wife? We suggest that the explanation that occurs to them is: since this person evoked no emotional response, she must be a stranger, even though she looks just like my wife. The patient predicts an emotional response to occur when the person appears, but this prediction fails, triggering the delusional thought.

Prediction error is also a central concept in a quite different area of psychology: associative learning theory, where failures of prediction are seen as critical triggers for new learning. The formation of a delusional belief is a kind of new learning. So Langdon and Coltheart, with PhD student Robert Ross and research associate Dr Oren Griffiths (an expert in associative learning) are working on theoretical relationships between the proposed theory of delusional belief and the nature of associative learning.

### A novel social cognitive training program for people with schizophrenia

**Pamela Marsh**

A new training program, SoCog, has been devised for people with schizophrenia. It is a novel remediation program that targets the characteristic social impairments found in schizophrenia. These social impairments are identified by people with schizophrenia, their carers, and clinicians as one the greatest unmet treatment needs. Because these impairments are not usually improved by medications commonly used to treat schizophrenia, SoCog offers an alternative treatment plan. SoCog comprises two independent training programs: emotion recognition training (SoCog-ERT) and mental-state reasoning training (SoCog-MSRT). These training programs are based on a suite of games that are presented within a social atmosphere with small groups of participants. SoCog-ERT training aims to improve the ability to accurately recognise other people's facial expressions of emotion, an ability that is essential for effective social interaction and an ability that is profoundly impaired in schizophrenia. In contrast, SoCog-MSRT training encourages flexible thinking about the likely thoughts of others, the tolerance of ambiguity, and thoughtful consideration of other people's perspectives within social contexts.

The SoCog group is leading the world in the use of training programs designed to improve social thinking in schizophrenia. From 2008-2011, we have been testing the efficacy of SoCog funded by an Australian Rotary Mental Health Grant (2008-2010) and by the Schizophrenia Fellowship of New South Wales (2009) at Cumberland Hospital (Westmead, Sydney). The results have shown promising improvements in the social abilities of participants. Attesting to the success of the program, the study will be implemented across a number of Sydney mental health services in 2012, using funding awarded to Pamela Marsh by the Belief Formation Program of the CCD. The study will also be implemented by the Brisbane Metro South Health Service District in 2012, in collaboration with Dr Frances Dark.

# Language Program

## How children with specific language impairment interpret logical words

**Stephen Crain, Rosalind Thornton, Karen Smith-Lock, Peng Zhou and Drew Khlentzos**

This research project investigates how children and adults understand logical words in different languages. Consider the English sentence (1).

(1) *John didn't bring (both) beer and wine to the party.*

This sentence is true for adult English-speakers if John just brought beer to the party, but didn't bring wine. However, when (1) is translated into Japanese, as in (2), adult speakers of Japanese judge (2) to be true if John brought neither beer nor wine to the party.

(2) *John-wa biiru mo wain mo paatii-ni motteko-nakat-ta*

John-TOP beer-and wine-and party-Loc bring-neg-past
'As for both beer and wine, John did not bring them to the party.'

Based on linguistic theory, we predicted that, across languages, preschool children would judge sentences like (1) and (2) to be true in exactly the same circumstances. This proved to be correct. English-speaking children judge (1) to be true in the same circumstances as Japanese-speaking children and adults judge (2) to be true. This means, however, that English-speaking children and English-speaking adults have different interpretations of (1).

We have recently extended this study to English-speaking children with specific language impairment (SLI). We have found that children with SLI understand sentences like (1) in exactly the same way as normally developing children acquiring English or Japanese. This invites the conclusion that children with SLI assign the same kinds of logical meanings as normally developing children acquiring different languages.

## The development of linguistic representations in children with specific language impairment and autism spectrum disorders

**Katherine Demuth, Susan Lin, Ekaterina Tomas, and Neha Khetrapal**

This project focuses on the development of linguistic representations in two populations with language problems, children with specific language impairment (SLI), and children with autism spectrum disorders (ASD). Our research on children with SLI examines some of the phonological and morphological skills that are acquired relatively late by typically developing children. This late acquisition could be due to problems of articulation/motor control or it could be due, instead, to incomplete representations of phonemes and grammatical morphemes. By comparing the performance of children with SLI to that of both age-matched and language-matched controls, we gain a better understanding of the factors that contribute to the late acquisition of linguistic skills in both populations.

Research on children with autism spectrum disorders (ASD) examines their skills in perspective taking. Problems in perspective taking are associated with Theory of Mind (ToM) tasks and sometimes result in pronoun reversals (e.g., the use of 'you' to mean 'I'). This study will determine the proportion of children with ASD who produce pronoun reversals. We will also investigate the extent to which pronoun reversal correlates with performance on ToM tasks and on visual perspective-taking tasks in children with different levels of severity of ASD. All children with ASD are expected to perform well on visual perspective taking, but their performance on ToM and pronoun reversal tasks are expected to correlate with severity of ASD.

*The Child Language Laboratory*

## Language impairments and treatment in aphasia

**Lyndsey Nickels, Britta Biedermann, Kati Renvall, Karen Croot, Amanda Osborne, Lisi Beyersmann, Cathy Taylor, Nora Fieder, Trudy Krajenbrink and Anastasiya Romanova**

Language can be impaired as a result of stroke, traumatic brain injury, or dementia. These various causes of acquired language impairment are known as aphasia. Our research has two major aims: first, to better understand the different ways language breaks down in aphasia as a means to inform theoretical models of language processing and, second, to develop and evaluate effective treatments for aphasia.

People with aphasia often have trouble producing the right singular and plural endings on words. For example, when naming pictures, one person we tested said "socks" when shown a picture of just one sock, but said "log" when shown a pile of logs, "scissor" for 'scissors', and "sheeps" for (many) 'sheep'. One strand of our research aims to explain why these errors occur. In so doing, we can better understand how the singular and plural of words are stored in our minds.

We have had a longstanding interest in treatments that can improve the ability of people with aphasia to retrieve the words they need to communicate. Three specific projects are underway. One project examines whether techniques that have proven effective with people with aphasia, following stroke, are also effective in people with a progressive aphasia (a form of dementia). The second examines whether two variants of an intensive aphasia therapy (Constraint Induced Aphasia Therapy) are effective when carried out in clinical settings. Treatment for word retrieval has focused mainly on concrete nouns (e.g., names of everyday objects), but people with aphasia need to be able to retrieve many other kinds of words. Hence, in a third project we are trialling new treatments designed to improve the ability in people with aphasia to retrieve the words they need to express emotions (e.g., frustrated, delighted).

## How tense and negation interact in children with specific language impairment

**Rosalind Thornton, Stephen Crain, Peng Zhou and Vincenzo Moscati**

Some English-speaking children, who have been identified as having specific language impairment (SLI), leave off word endings that express tense (past, present, future). Children with SLI might say "He walk to school", whereas normally developing children at the same age would say "He walks to school" or "He walked to school". Normally-developing children produce the same kinds of 'errors' as children with SLI, but these errors occur at a much earlier age. Children with SLI do not reliably use tense endings until they are about 9 years old.

We are designing new methods for evaluating the grammars of older children with SLI. One study is designed to elicit the use of tense in negative statements. Negation introduces additional complexities, beyond those introduced by tense. For example, the negative statement "He doesn't walk to school" requires the word doesn't, which includes the verb do, plus the present tense marker 's', plus the negative ending 'n't'. Normally developing children take considerable time to figure out how the word doesn't is composed, and they often produce non-adult negative statements like "He not walk to school". Children with SLI are expected to make the same errors as normally developing children in forming negative statements, but children with SLI are expected to continue to make these errors for an extended period of time.

# Memory Program

## Imagining the future

**John Hodges, Olivier Piguet, Greg Savage and Michael Hornberger**

The episodic memory system enables us to remember personal events from our past. These memories are essential for our sense of self and continuity over time. The same memory system is also instrumental in allowing us to imagine possible personal events in the future. Damage to the episodic memory system, therefore, prevents us from imagining the future.

Researchers at the University of New South Wales and at the University of Auckland are collaborating in a series of studies designed to reveal the cognitive and neural underpinnings of future thinking. A previous study investigated the capacity of patients with semantic dementia to imagine future events. Semantic dementia is a progressive neurodegenerative brain disorder that results in the progressive loss of knowledge about the world (semantic knowledge). While patients with semantic dementia can remember events from their recent past, they experience marked impairment in imagining future events. This ability is subserved by areas of the brain that are known to be critical for semantic memory (in the anterior and lateral temporal lobe regions of the brain). Our previous study was the first to demonstrate that semantic memory is essential for the ability to imagine the future, presumably by providing the scaffolding necessary for the construction of future events.

Other studies currently underway investigate the abilities of other clinical groups to imagine the future. These groups include temporal lobe epilepsy, transient epileptic amnesia and frontotemporal dementia (FTD; also known as semantic dementia). In preliminary studies in patients with FTD, who present with marked changes in social cognition as well as atrophy of the frontal lobes, we have found that these patients are as impaired as patients with Alzheimer's disease at remembering the past and imagining the future. We are now exploring the brain structures critical for future thinking in these patients using brain imaging techniques.

## Memory in the dementias

**Muireann Irish, Donna Rose Addis, John Hodges and Olivier Piguet**

The inability to recall personal recent life events (episodic memory) is an early and prominent symptom of Alzheimer's disease. In a series of studies, we have demonstrated that patients with frontotemporal dementia (FTD), the second most common form of dementia in younger people, also have significant impairments in episodic memory. This finding is clearly of clinical relevance for the accurate diagnosis of these disorders.

In this project, both cognitive tests and brain imaging methods are used to elucidate the nature of the memory problems in patients with Alzheimer's disease and in patients with FTD. Preliminary findings indicate that the hippocampus and other medial temporal lobe structures are affected in both types of dementia. While the posterior cingulate cortex appears critical in Alzheimer's disease, damage to the frontal lobe contributes to poor memory performance in FTD. More specifically, contextual retrieval of past events appears to be related to prefrontal cortex regions, while orientation in space and time appears to be related to posterior brain regions. We are measuring a number of other brain structures known to be critical for memory (the thalamus, fornix and mammillary bodies) and we are developing memory tests to differentiate these diseases based on the aspects of memory affected. This approach will improve our ability to characterise memory dysfunction in other disorders, including Parkinson's disease, and to assess the risk of developing dementia in people with emerging memory problems.

## Memory re-training

**Laurie Miller, Sharon Savage, Kylie Richardson, Zoe Thayer and Sunny Lah**

One of the goals of our research is to develop training programs to improve everyday functioning in patients with a range of memory disorders. At the Royal Prince Alfred Hospital, we have been running a six-week memory-training program for neurological outpatients with prominent memory problems after stroke or as a complication of epilepsy. In these sessions, a neuropsychologist guides a group of participants through memory exercises and teaches them about external memory aids and lifestyle factors that affect memory. To test the effectiveness of training, participants are assessed before and after the program using objective memory tests and questionnaires about everyday memory. Significant improvement in memory functioning was seen after training in over three-quarters of participants, and improvement persisted for at least three months. Participants with epilepsy seemed to benefit more than those with a history of stroke. Younger age, lower levels of depression and poorer baseline memory skills resulted in greater training-related gains. Importantly, time since onset was not related to outcome, suggesting that it is never too late to try and improve memory after acquired brain damage.

Related work at the University of New South Wales focuses on patients with a form of frontotemporal dementia (FTD). Patients with this disorder have major problems with naming and comprehension of word meaning, despite having skills that make them ideal candidates for rehabilitational strategies, including well-preserved memory for recent events, and good attentional and problem solving skills. In a pilot study, we assessed the effectiveness of a word-retaining program in FTD. Improvements were evident within three weeks of simple, repetitive practice of word-picture pairings that were carried out in the participants' homes using a computer. We are now extending this to include a larger number of participants and to explore whether this approach can lead to long-term improvements, which generalise to conversational speech and to language comprehension.

# Person Perception Program

## Adaptive processes in person perception

**Gillian Rhodes, Nichola Burton, Andy Calder, Linda Jeffery and Nadine Kloth**

We use a wealth of social cues from human faces to guide our interactions with others. We are interested in the perceptual foundations of our ability to 'read' these cues in order to distinguish an individual face among thousands of faces despite their perceptual similarity. Our work with face aftereffects suggests that faces are coded according to perceptual norms or averages that are adaptively tuned by experience.

We are investigating the scope and functional role of adaptive, norm-based coding in person perception. Norm-based coding allows us to see beyond the shared structure of all faces, to those characteristics that define a particular individual and the variations in appearance that are associated with different emotional and attentional states (e.g., happy, sad, surprised). Exposure to a particular face updates the norm, shifting it temporarily towards that face, and selectively biases perception towards an identity with opposite characteristics. More specifically, we are addressing the following questions: What aspects of faces and bodies are coded relative to norms? Why is norm-based coding used for these aspects, but not other aspects, such as viewpoint and gaze direction? How is face adaptation functionally related to recognition and discrimination performance?

## Person perception in autism spectrum conditions

**Louise Ewing, Gillian Rhodes, Frances Caulfield, Chiara Fiorentini, Linda Jeffery, Daphne Maurer, Romina Palermo, Elizabeth Pellicano, Naoimh Stewart and Mark Vida**

*Person perception*

Children with autism spectrum disorders (ASD) often experience face-processing difficulties, as compared to typically developing children. These difficulties include an impaired ability to recognise and discriminate between identities, so as to 'read' faces (e.g., understand emotional expressions, interpret social cues from eye-gaze). Recent research suggests that family members of individuals with ASD may share these difficulties. Our previous work has focused on the mechanisms that underlie face-processing differences and deficits in autism. We have identified seemingly intact rewards that children with ASD associated with viewing faces, a finding that undermines a popular explanation for the processing difficulties which is that children with ASD experience atypical face rewards which results in diminished social interest and expertise with faces. We also found selectively reduced perceptual aftereffects (shifts in 'what looks normal') after children with ASD are exposed to consistently distorted faces, but not non-face objects. This finding indicates a selective problem with perceptual updating of face representations that could plausibly contribute to face-processing difficulties in autism. We are currently investigating whether the perceptual coding of faces is atypical in these individuals and their family members and, in particular, whether coding is less norm-based. We will also examine whether children with ASD have difficulty integrating multiple social cues, such as facial expression and eye-gaze direction, and how their perceptions of social attributes, such as trustworthiness, might differ from those of typically developing children.

## Face processing in adults with autism spectrum disorders

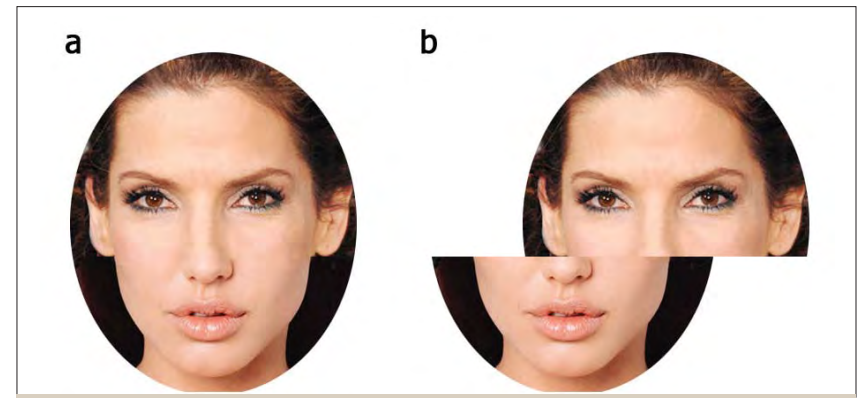
**Daphne Maurer, Mel Rutherford (McMaster University, Canada), Andrew Calder, Linda Jeffery, Gillian Rhodes, Mark Vida and Jennifer Walsh**

Individuals with autism spectrum disorders (ASD) show deficits in many aspects of face processing. We are investigating the details of these deficits by comparing adults with ASD to IQ-matched controls, using a variety of face processing tasks. In one face adaptation task, we are investigating the possibility that the abnormally small identity aftereffects witnessed in children with ASD persist into adulthood and, if so, whether these abnormal identity aftereffects result from less norm-based processing. In another adaptation task, we are investigating whether adults with ASD, like normal adult controls, have dissociable representations of upright and inverted faces. We are also investigating whether the integration of eye gaze and facial expression information is reduced in adults with ASD. In typical adults, gaze direction influences the processing of facial expression, and facial expression influences judgments of gaze direction. We are currently investigating whether adults with ASD show similar patterns of reciprocal influence.

## Insights into face processing mechanisms from congenital prosopagnosia

**Romina Palermo, Shahd Al-Janabi, Andrew Calder, Linda Jeffery, Elinor McKone, Davide Rivolta, Megan Willis and C. Ellie Wilson**

People with congenital prosopagnosia have severe, life-long deficits in recognising the identity of familiar people from their faces, but no known history of brain injury. Our recent work has focussed on discovering whether two key perceptual mechanisms involved in face recognition are disrupted in this developmental form of prosopagnosia. One mechanism is holistic processing, which is the ability to integrate visual information across the whole face. We found that participants with prosopagnosia processed faces holistically, but that the strength of holistic coding was weaker than that displayed by a group of age- and sex-matched controls, suggesting that poor holistic coding may contribute to prosopagnosia. Another mechanism is adaptive face coding, a process in which identity is coded relative to an average or 'norm' face, as reflected by face aftereffects. Individuals with prosopagnosia displayed a significant face identity aftereffect, however their impression of the identity of the neutral average face was not significantly shifted by adaptation, suggesting that adaptive coding of identity is abnormal in prosopagnosia. The finding of reduced holistic coding and abnormal face identity aftereffects in individuals with severe face recognition problems is consistent with suggestions that these mechanisms have a functional role in face recognition.




*Holistic face processing can be measured via the composite face effect, where judging the identity of the top (Sandra Bullock) and bottom (Angelina Jolie) halves of faces is more difficult when they are vertically aligned and form the illusion of a new face (panel a) compared to when they are unaligned so that they do not resemble a whole face (panel b).*

## The development of face perception mechanisms

**Linda Jeffery, Brooke Addison, Nichola Burton, Kate Crookes, Sarah Haynes, Elinor McKone, Elizabeth Pellicano, Cameron Rathbone, Ainsley Read, Gillian Rhodes and Elizabeth Taylor**

Faces convey rich social information that guides social interactions. Adults have little difficulty reading this information from thousands of faces, despite their apparent similarity as visual patterns. This exquisite expertise with faces emerges slowly during development, with performance on many face perception tasks improving gradually throughout childhood. However, the source of this improvement is controversial. We are investigating whether changes in the perceptual mechanisms of face perception during childhood could account for the age-related improvement in face perception performance. One such mechanism is norm-based coding, a process in which identity or emotional expression is coded relative to an average or 'norm' face. We have used face aftereffects, in which perception of a face is biased by the characteristics of previously seen faces, to determine whether children, like adults, use norm-based coding for identity and emotional expression.

Our findings demonstrate that norm-based coding of identity is present by at least age seven, and probably by age four. Norm-based coding for emotional expression is present in ten year-olds, with younger children yet to be tested. The emerging picture is that norm-based coding of faces matures early in development. Therefore, changes in the use of this mechanism are unlikely to underlie the improvement in face perception performance during childhood. It remains possible, however, that norm-based coding mechanisms are refined during development and this could contribute to face perception improvement. We are also investigating another potential source of children's difficulties. Children may fail to code faces in a way that is robust to changes in viewpoint (e.g., profile versus face-on), resulting in particular difficulty in recognising faces seen from new viewpoints.

*One of the Person Perception research stars!*

# Reading Program

## Computational modelling of reading

**Max Coltheart, Serje Robidoux, Stephen Pritchard, Ami Sambai, Derek Besner, Kathy Rastle and Claudio Mulatti**

This project has been devoted, in part, to programming the second version of the DRC computational model of reading, DRC 2.0. Programming has been completed, so the DRC 2.0 model is now ready to be tested. Testing will involve new experimental studies of reading aloud and visual word recognition. The empirical work will be carried out in three overseas laboratories - Professor Derek Besner's lab at the University of Waterloo, Canada, Professor Kathy Rastle's lab at Royal Holloway, University of London, UK and Dr Claudio Mulatti's lab at the University of Padova, Italy - all three are Partner Investigators on a recently awarded ARC Discovery grant. Progress on the project will also be greatly facilitated by the recent arrival of postdoctoral fellow, Dr Serje Robidoux, whose PhD work was done in Professor Derek Besner's lab.

Work is also underway on a second project, aimed at developing a DRC-style computational model of reading aloud and visual word recognition in Japanese: challenging work because Japanese uses three different writing systems, rather than the single, alphabetic, writing system used by languages whose reading DRC 1.0 and 2.0 models.

## Letter position dyslexia and letter position processing

**Saskia Kohnen, Anne Castles, Naama Friedmann, Lyndsey Nickels and Genevieve McArthur**

Teachers who work with children with reading difficulties report that common errors include reading form as 'from', or saw as 'was'. These kinds of errors are often cited in the popular literature as a hallmark of dyslexia. Yet, to date, there has been no thorough documentation of a selective letter-position coding deficit in English for children with developmental dyslexia. This year we investigated the reading, spelling and oral language of three English-reading children who show the symptoms of letter position dyslexia:

- When reading aloud migratable words (anagrams) these children make migration errors (reading spots as 'stops')
- When reading aloud migratable nonwords (nonwords that are anagrams of words) they make migration errors (e.g., reading drit as 'dirt')
- Migration errors also occur when asked to provide oral definitions of printed words (e.g., fringes: I've got 10 of them on my hands).
- Pairs of migratable word are judged as the same (e.g., slime = smile)

These children are good at reading nonmigratable words (e.g., yacht, long) and nonwords (e.g., zirn) and also show excellent oral language skills. Yet, their spelling is poor. For comparative purposes, we have been investigating the letter position coding abilities of 127 normally developing readers in Years 2, 3 and 4. We compared their performance in reading aloud migratable words (e.g., bread, three, diary) versus words without potential for migration (e.g., heard, boot, bitter). The children made many more errors on migratable than on non-migratable words, and the proportion of migration errors remained relatively stable across the three year levels. A tendency to make a high proportion of migration errors was not associated with deficits in other reading skills, such as word reading, nonword reading or letter knowledge. Surprisingly, making a high proportion of migration errors was associated with strong word-reading skills. The results lead us to view letter position coding as a fragile process with little evidence of improved processing over the course of the Primary School years.

This research helps us define more clearly the prelexical processes involved in reading – a very exciting and little researched aspect of the reading system.

## Understanding how orthographic representations are formed

**Eva Marinus, Anne Castles, Lyndsey Nickels and Hua-Chen Wang**

Skilled reading is characterized by high levels of accuracy and automaticity. In order to automate reading, children have to learn to recognise words instantaneously. It has been well established that development of immediate word recognition goes hand in hand with building up visual representations of words, known as orthographic representations. Orthographic representations enable the reader to directly access the pronunciation and meaning of a word, without having to sound it out letter by letter. During reading development, children are filling up their 'orthographic lexicon' with such orthographic representations (like a library of visual word forms). In 2011, we have been studying this process using both longitudinal and training study designs.

Since the number of orthographic representations increases enormously during reading acquisition, there is a need for lexical restructuring enabling the reader to immediately access the correct word form and not to get confused by similar words (compare for instance cat-cut-bat). We have been conducting research examining the interaction between the increase of orthographic representations and lexical restructuring. In 2010, we started a longitudinal study with more than 60 Year 2 and 3 children. All children completed standardised reading tasks and experimental reading tasks. In terms 1 and 4 of 2011, we went back to the schools to work with the same children, so that we could monitor their reading development and how this relates to their ability to quickly access the right orthographic representation (e.g., cat) without getting confused or hampered by highly similar words in their lexicon (such as cut, bat). We find evidence that the children do indeed suffer interference from similar-looking words. We have also been exploring the acquisition of orthographic representations through training studies. We teach children 'new' words such as ferb, and examine how factors, such as, the regularity of the word and what is known about its meaning and pronunciation, affect the learning of its orthography.

## The Reading Training Study: Phase 1

**Genevieve McArthur, Anne Castles, Saskia Kohnen, Max Coltheart, Linda Larsen, Kristy Jones, Thushara Anandakumar, Erin Banales and Hua-Chen Wang**

The aim of the Reading Training Study is to work out how to best help children who, for no apparent reason, have great difficulty learning to read (developmental dyslexia). Children with dyslexia are not all the same: Some children have phonological dyslexia (i.e., are poor at reading with the letter-sound rules), some have surface dyslexia (i.e., are poor at reading whole words by sight), and most have mixed dyslexia (i.e., are poor at using letter-sound rules and reading whole words by sight). Unfortunately, very little is known about how to treat different types of dyslexia.

In Phase 1 of the study, we allocated 120 children with dyslexia to one of three training groups. Group 1 did 8 weeks of phonics training (i.e., reading with the letter-sound rules) followed by 8 weeks of sight-word training (i.e., reading whole words by sight). Group 2 did the reverse. And Group 3 did 16 weeks of 'mixed training' (i.e., phonics training and sight-word training on alternative days). Before and after each treatment, the children did a large number of reading tests.

The data shows that phonics plus sight-word training significantly improves general reading skills regardless of the order of training. Also, phonics training on its own has the biggest effect on reading tasks that require letter-sound reading, and sight-word training has the biggest effect on reading tasks that require reading words by sight. These results indicate that 16 weeks of training can improve the reading skills of children with dyslexia, and that different types of training should be used to train different types of dyslexia.

*A reading training session*



# Cross Program: Neural Markers of Cognition & its Disorders

## Motor control, language production and language perception

**Stephen Crain, Maria Teresa Guasti (University of Milano-Bicocca, Italy), Blake Johnson, Paul Sowman, Leidy Castro-Meneses, Joann Tang and Andrew Etchell**

Clinicians and scientists have long observed that children with language problems tend to also have various kinds of motor problems. This project is examining the hypothesis that both the motor and cognitive problems of some children stem from brain-based deficiencies in the ability to cope with irregularities in the timing of the flow of information. For example, one recent study has reported that children with dysgraphia tend to have a perseverative manner of writing that is more rhythmic than the writing of typically developing children. In the area of speech production, fluency shaping therapies for stuttering are timing related, and result in output that is less variable (more "robotic") than normal speech. On the comprehension side, linguists have noted a dramatic irregularity in the timing of information certainty within a sentence, such that there is much uncertainty about the meanings of words that occur at the beginning of sentences, but that this uncertainty decreases dramatically as the sentence unfolds, and then increases again following the final word of the sentence. This pattern in the on-line reduction of uncertainty invites us to infer that children's brains need to be able to deal with irregular timing functions in order to acquire language normally. This set of observations indicates that basic temporal control issues may be manifested across different cognitive and motor domains. We plan to systematically study this possibility, with a research strategy that ties together concepts and findings from the literature on language acquisition and on motor control.

## Development of face perception

**Blake Johnson, Jon Brock, Gillian Rhodes, Wei He, Romina Palermo, Graciela Tesan, Linda Jeffrey and Nadine Kloth**

Some investigators maintain that full maturation of the abilities to perceive faces occurs as late as adolescence, while others suggest that it happens much earlier, in the preschool years. In support of the late development hypothesis, recent neuroimaging studies have reported that an adult face-specific brain response is absent in children. However these researchers used adult sized brain imaging systems, which are not optimal for measuring brain activity from the much smaller heads of young children. This project examines the question of when face perception attains adult capacities by measuring face-specific responses in pre-schoolers aged 3-5 years, using the unique child magnetoencephalography (MEG) brain imaging system at the CCD, which has been custom-built for use with pre-school aged children.

*The child MEG system*

## Auditory processing in dyslexia

**Blake Johnson, Genevieve McArthur, Michael Hautus (University of Auckland, New Zealand), Melanie Reid, Jon Brock, Samantha Bzishvili, Anne Castles and Stephen Crain**

This project examined central auditory processing in typically-developing readers, and in children with dyslexia. The main finding was that children with dyslexia showed less brain lateralisation of auditory cortical function as compared to typically-developing readers. The study recorded brain responses by both groups of children using electroencephalography (EEG) and MEG concurrently. There were 16 children with dyslexia aged 8-12 years, and an age-matched group of 16 children with normal reading ability. Auditory brain responses were elicited using sounds that were designed to engage binaural auditory mechanisms. We found that cortical processing of binaural information was associated with an auditory brain response at a latency of about 250 to 500ms. Typically-developing children and children with dyslexia showed no significant difference in the binaural response. However, the children with dyslexia showed less lateralisation of auditory cortical functioning, and a different pattern of development of auditory lateralisation with age.

## Neural mechanisms of anticipatory postural control

**Tommy Ng, Blake Johnson, Jon Brock and Paul Sowman**

Brain systems for postural control are essential for everyday movements, and there is increasing evidence that abnormal development of such systems are associated with pervasive developmental cognitive disorders including autism spectrum disorders. This project used MEG to measure brain function in healthy adults performing an anticipatory postural adjustment task (APA). The results showed that components of a motor network of the brain - including cortical motor regions, basal ganglia, and thalamus - were activated in sequence during the task. These are the first human neuroimaging data on the functional architecture of APA. The findings will extend theoretical models derived from patients with brain damage, and will provide direction for future research into motor dysfunctions that are associated with developmental cognitive syndromes.

# Perception in Action

*Research in Perception in Action has led to the formation of an extremely productive and highly valued team of cognitive scientists in the Department of Cognitive Science at Macquarie University. This team of researchers does not receive funding from the ARC Centre of Excellence in Cognition and its Disorders (CCD), however, their research nicely complements that of the CCD research programs, so we have included some representative project summaries from this group in the CCD annual report. We have adapted these project summaries from recently submitted or successful grant applications.*

## Making sense of the world: How does the brain process task-relevant information?

**Alexandra Woolgar, Anina Rich, Mark Williams and John Duncan (MRC Cognition and Brain Sciences Unit, UK)**

In everyday life, we are constantly bombarded with information from our senses. To make use of the sensory information we receive, we must partial out information that is irrelevant, and integrate the relevant sensory information with our memories, goals, and with our tasks at hand. Non-invasive neuroimaging techniques (e.g., functional Magnetic Resonance Imaging - fMRI; magnetoencephalography - MEG) afford a unique opportunity to investigate the processes involved in sorting sensory information in the human brain. New methods for the analysis of brain imaging data allow us to investigate not only which brain areas respond to particular tasks but also what information is coded in different regions of the brain. One aim of this project is to extend the current fMRI analysis techniques, so that we can examine more precisely how information is represented in the brain, using more fine-grained units of analysis (patterns across voxels). A second goal is to develop a similar method for analysing MEG data. The third aim of the project is to implement these techniques in a series of new experimental studies that address fundamental questions about how sensory information is represented and integrated in the human brain.

More specifically, we will investigate the cognitive processes that occur in the frontoparietal brain regions, regions that have proven to be critical for the modulation and cognitive control of information processed in the visual cortex.

## Agent tracking and its disorders: A theory of the cognitive mechanisms, errors, and ethics involved in the identification of human individuals

**Nicolas Bullot**

Humans are able track each other with remarkable precision. We are able to rapidly gather and update mental records about the identity, mental states, agency, personality and personal history of others. Although the ability to track other humans is a prerequisite for predicting, understanding, and controlling the behaviour of other people, fundamental questions remain unaddressed about the processes that underlie our ability to track other people. We feel that progress is impeded due to the lack of a unified multidisciplinary framework within which to study the underlying cognitive and neurological components of how we track human agents. The goal of this project is to develop and test a cognitive theory that purports to provide the needed framework for understanding and empirically investigating agent tracking. The studies we proposed combine research on the processes involved in agent tracking in naturalistic philosophy and in cognitive psychology, as well as investigations of societal tracking in social sciences (e.g., surveillance studies). In addition, we proposed empirical tests of the theory's predictions, using experimental methods of cognitive science and empirical investigations from social sciences. Finally, the goals of the project will be augmented by conceptual analysis, in the tradition of analytic philosophy of cognition and in the philosophy of science.

## Towards understanding visual perception of the body: Neuroimaging and behavioural studies

**Regine Zopf and Mark Williams**

A central question in cognitive neuroscience is how embodiment (i.e., having the kinds of bodies we have) influences our physical actions and how this shapes our perception of the world. This research project aims to enhance our understanding of the influences of the body on perception, and its neural underpinnings. More specifically, the present project investigates how information from the hands influences how healthy observers, as well as in amputees, perceive external objects. In order to understand the neural mechanisms that underlie the use of our hands in manipulating objects, this project uses neuroimaging techniques to demarcate the neural representations of hand form and hand orientation, with special attention being paid to brain areas that have been shown to be involved in planning and the control of action.

# HOSTED *Events*

*From left to right:*
*Professor Mary O'Kane – NSW Chief Scientist, Professor Jim Piper – Deputy Vice Chancellor (Research), Macquarie University, Professor Margot Prior - The University of Melbourne, Dr Louise Mercer – Queensland University of Technology, Mr Rob Ramjan AM - Schizophrenia Fellowship, Ms Penny Bambrick – Centre Schemes, Australian Research Council, Professor Steven Schwartz – Vice Chancellor, Macquarie University, Professor Bruce Tonge – Monash University, Professor Ovid Tzeng – National Yang-Ming University, Professor Stephen Crain – Director, ARC Centre of Excellence in Cognition and its Disorders, Macquarie University and Professor Janet Greeley – Dean, Faculty of Human Sciences, Macquarie University*

## CCD Inaugural Workshop

### 3 February
### Macquarie University

### Keynote Speakers

**Associate Professor Douglas Cheyne**
University of Toronto, Canada
**Professor Georgina Rippon**
Aston University, UK

The inaugural workshop of the ARC Centre of Excellence in Cognition and its Disorders consisted of three events. First, there was a tour of the KIT/Macquarie Brain Research Laboratory and other laboratories of the Centre, followed by two tutorials that focused on specialised instruments in cognitive science. Associate Professor Blake Johnson conducted the first tutorial, which was an introduction to the MEG brain imaging systems. Dr Jon Brock, also from Macquarie University, conducted the second tutorial, which provided an introduction to the technique of eye-movement recording, also known as eye-tracking.

In addition to the tutorials, the workshop also included two invited talks. One was by Associate Professor Douglas Cheyne, from the University of Toronto, on "Using MEG to study the cortical control of movement: Methodological advances and challenges for the study of early motor development". The second was by Professor Georgina Rippon, from Aston University, on "Insights into autism: Contributions from brain imaging studies".

## Harvard-Australia Workshop on: Language, Learning and Logic

### 22 - 26 August
### Macquarie Graduate School of Management

### Keynote Speakers

**Dr Avery Andrews**
Australian National University
**Assistant Professor Ivano Caponigro**
University of California, USA
**Distinguished Professor Stephen Crain**
Macquarie University
**Professor Max Cresswell**
Victoria University, New Zealand
**Professor Katherine Demuth**
Macquarie University
**Assistant Professor Michael Frank**
Stanford University, USA
**Professor Maria Teresa Guasti**
University of Milan-Bicocca, Italy
**Professor Alan Hajek**
Australian National University
**Professor C.-T. James Huang**
Harvard University, USA
**Professor Frank Jackson**
Princeton, USA & Australian National University
**Professor Mark Johnson**
Macquarie University
**Associate Professor Drew Khlentzos**
University of New England
**Terje Lohndal**
University of Maryland, USA
**Dr Amy Perfors**
University of Adelaide
**Professor Jonathan Schaffer**
Australian National University
**Professor Stuart Shieber**
Harvard University, USA
**Professor Mike Smithson**
Australian National University
**John L Loeb Associate Professor Jesse Snedeker**
Harvard University, USA
**Professor Edward Stabler**
University of California, USA
**Professor Mark Steedman**
University of Edinburgh, UK
**Associate Professor Rosalind Thornton**
Macquarie University

This international workshop brought together a highly interdisciplinary group of researchers to focus on fundamental research questions that lie at the intersection of language, logic and learning.

Philosophers and logicians study knowledge and how it is represented and manipulated, whereas linguists study how meanings are computed and expressed in human languages.

Psychologists and, increasingly, computer scientists provide different viewpoints on how knowledge is represented and how it is acquired.

Traditionally, these issues have been researched in different corridors: logic has been studied by philosophers in the school of humanities, language has been studied by linguists in the social sciences, and learning has been studied by researchers from fields as disparate as psychology and computer science.

This was a highly successful workshop that provided an opportunity for renewed interdisciplinary interaction.

The workshop was co-sponsored by the ARC Centre of Excellence in Cognition and its Disorders (CCD), the Macquarie Centre for Language Sciences (CLaS), and the Harvard University Australian Studies Committee.

## Visual Word Recognition Workshop

### 6 June
### Macquarie University

**Keynote Speaker**
**Professor Ken Forster**
University of Arizona, USA

This was a mini workshop on visual word recognition organised by the Reading Program to coincide with visit from Professor Ken Forster to the Macquarie node of the CCD.

## Eye-Tracking Workshop 1

### 13 - 14 June
### University of Western Australia

The Person Perception Program hosted a two-day training workshop for a new eye-movement recording device, the EyeLink 1000 eye tracker. This eye-tracker uses infrared light and a miniature camera to perform highly accurate video-based eye movement recording. Billy Schmidt from SR Research Ltd led the workshop, which provided an introduction to the eye-tracking hardware and to the dedicated Experiment Builder software. The workshop was attended by members of the FaceLab, the Cognition and Emotion Lab, and the Human Factors Lab, at the University of Western Australia. The eye-tracker will be used for studies of face and person perception in adults, in typically developing children and in children with autism spectrum disorders.

## Agent Tracking and its Disorders Workshop

### A Multidisciplinary Workshop on the Identification and Tracking of Human Individuals

### 17 - 18, 20 - 21 June
### Macquarie University

**Keynote Speaker**
**Professor Peter Carruthers**
University of Maryland, USA

Numerous studies in cognitive science, philosophy, and in the social sciences appeal to concepts that are derived from the concept of tracking individual things or natural kinds. The term 'tracking' and its synonyms such as 'identification', 'keeping track', 'monitoring', or 'surveillance' are used to describe aspects of our ability to individuate, identify and locate individual things in the world, and to respond to their changes over time. This workshop brought together experts in cognitive science, philosophy, and in the social sciences to discuss theories and empirical findings about how and why our abilities and disabilities in discovering truths about people through the tracking of their faces, bodies, effects, locations, or minds relate to fundamental epistemological, psychological, and societal issues. The workshop was co-sponsored by the ARC Centre of Excellence in Cognition and its Disorders (CCD), the Centre for Language Sciences (CLaS), the Macquarie Centre for Agency, Values, and Ethics (CAVE), and the Macquarie Centre for Cognitive Science (MACCS).



## Workshop on Basic Research with Transcranial Magnetic Stimulation

### 30 June and 1 July
### Macquarie University

**Keynote Speakers**
**Dr Arman Abrahamyan**
University of Sydney
**Dr Chris Chambers**
Cardiff University, UK
**Professor Justin Harris**
University of Sydney
**Dr Marc Kamke**
University of Queensland
**Dr Martin Sale**
University of Queensland
**Dr Paul Sowman**
Macquarie University

This workshop was hosted by the Perception in Action group in the Department of Cognitive Science, Macquarie University. The workshop was a forum to learn about and discuss research applications of transcranial magnetic stimulation (TMS), including applications in cognitive psychology and motor control. The focus of the workshop was not only to present completed research projects, but it was also designed to provide a forum for discussions of the types of problems that TMS can solve and research plans for studies using TMS. The workshop was an intimate event, with several lectures in the morning, together with ample time for discussions among the participants. The afternoon sessions on both days featured hands-on TMS tutorials.

## Perspectives on Language Disorders Workshop

### 10 - 11 August
### Macquarie University

**Keynote Speakers**
**Professor Naama Friedmann**
Tel Aviv University, Israel
**Professor Maria Teresa Guasti**
University of Milano-Bicocca, Italy

The Perspectives on Language Disorders Workshop was sponsored by the The Language Program. The theme of the workshop was to promote research in different areas of language disorders, including specific language impairment (SLI), dyslexia, aphasia, language problems associated with mental retardation, autism spectrum disorders, and language problems associated with hearing impairment. Research on disordered/atypical language provides insights into the fundamental nature of language and the human capacity for language. It provides a unique window on how the human mind is organised for language learning and language use. Language disorders are also critical for understanding how language is represented in the brain, as well as how other domains of cognition are involved in language development, comprehension and production. A greater understanding of various types of language disorders leads to more effective methods of assessment, treatment and prevention. The workshop provided a forum for interactions between a range of disciplines, including neuropsychology, linguistics, psychology, speech pathology, and special education.

## 6th Australian Cognitive Neuropsychology and Cognitive Neuropsychiatry Research Forum

### 24 - 25 August
### Macquarie University

### Keynote Speakers

**Dr Ian Apperly**
Birmingham University, UK
**Professor Anne Castles**
Macquarie University
**Professor Naama Friedmann**
Tel Aviv University, Israel
**Dr Ryan McKay**
Royal Holloway, University of London, UK

The research forum was organised by a team of young post-graduate and post-doctoral researchers. The theme of the forum was to highlight Cognitive Neuropsychology and Cognitive Neuropsychiatry by promoting research using data from cognitive disorders to develop and test cognitive models of normal and abnormal function in order to better understand and treat those disorders. The forum provided an opportunity for researchers from different disciplines, including neuropsychology, psychiatry, linguistics, psychology, philosophy and speech pathology, to present research that relates neuropsychological or psychiatric impairment to theories of cognitive function.

## Eye-Tracking Workshop 2

### 12 September
### University of Western Australia

A second training workshop was conducted by Dr Jon Brock, a research fellow, based at the Macquarie University node of the ARC Centre of Excellence in Cognition and its Disorders. Dr Brock's research investigates the cognitive and neural mechanisms involved in a range of developmental disorders, using a range of different methodological approaches, including eye-tracking. A range of staff and students attended this workshop from the University of Western Australia.

## Neural, Perceptual and Cognitive Mechanisms involved in Recognising Other-race & Other-age Faces

### 15 September
### University of Western Australia

### Keynote Speakers

**Dr Kate Crookes**
University of Hong Kong, Hong Kong
**Professor Will Hayward**
University of Hong Kong, Hong Kong
**Dr Holger Wiese**
Friedrich Schiller University of Jena, Germany

It is well-established that people are better at recognising faces from their own ethnicity than those from an unfamiliar ethnicity. This is often known as the other-race effect. A similar effect has been found for age, as it turns out we are better able to recognise individuals from our own age group than ones from much younger or older groups. However, the source of these effects remains controversial. In this symposium hosted by the Person Perception program, three international invited speakers presented new research on the perceptual, cognitive and neural processes that underlie these effects.

## Music, Memory & the Brain

### 30 September
### Neuroscience Research Australia
### University of New South Wales

### Keynote Speakers

**Dr Amee Baird**
Hunter Brain Injury Service
**Dr Sharpley Hsieh**
Frontotemporal Dementia Research Group, FRONTIER
**Fiona Kumfor**
Frontotemporal Dementia Research Group, FRONTIER

The CCD Memory Program hosted this meeting which covered research topics associated with music, memory and the brain. Three invited speakers spoke on the following topics: music as a mnemonic in dementia and traumatic brain injury; memories and feelings of music in frontotemporal dementia (FTD); and reduced emotional enhancement of memory in frontotemporal dementia.



## CCD Annual Workshop

### 23 - 24 November
### Macquarie University

### Keynote Speaker

**Emeritus Professor Brian Byrne**
University of New England

The two-day Annual Workshop was held at the Macquarie University node of the ARC Centre of Excellence in Cognition and its Disorders. The workshop provided a forum to learn about and discuss research projects developed by each of the five programs - Belief Formation, Language, Memory, Person Perception and Reading.

The workshop brought together our national and international members, including Partner Investigators, Chief Investigators and Associate Investigators from all three nodes.

*Professor Stephen Crain & Emeritus Professor Brian Byrne*

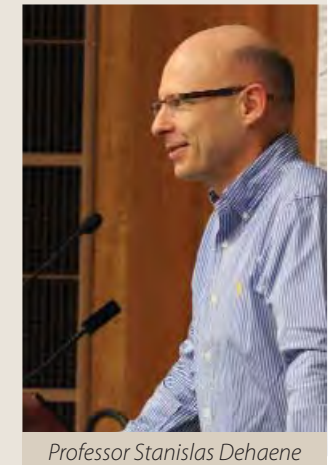
## Australasian Cognitive Neurosciences Conference 2011 21st meeting of the Australasian Society for Psychophysiology

### 9 - 12 December
### Macquarie University

### Keynote Speakers

**Dr Donna Rose Addis**
University of Auckland, New Zealand
**Professor Stanislas Dehaene**
Collège de France, France
**Professor Joel Talcott**
Aston University, UK
**Dr Peter Uhlhaas**
Max Planck Institute for Brain Research, Germany
**Dr Caroline Witton**
Aston University, UK

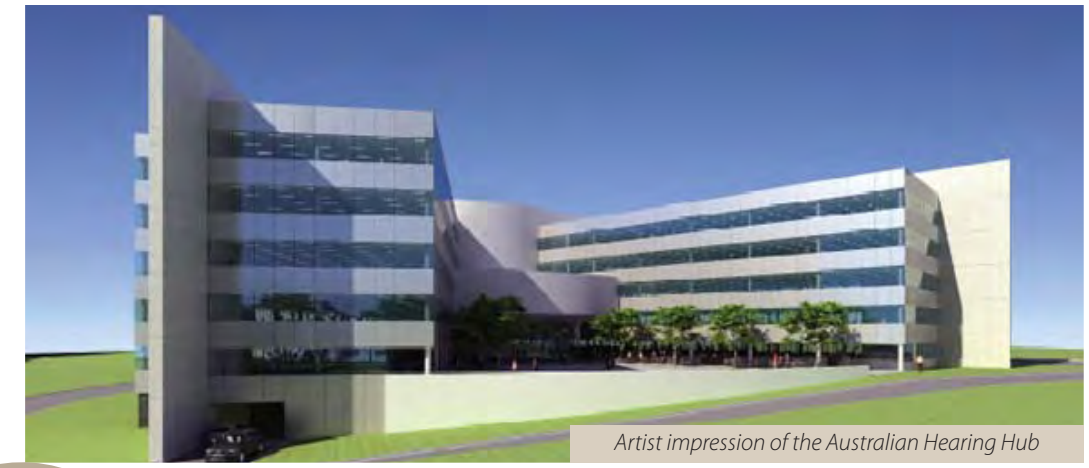
The Australasian Cognitive Neurosciences Conference is the annual meeting of the Australasian Society for Psychophysiology, and this year's event attracted over 180 researchers from a wide range of disciplines including psychology, psychiatry, neuroscience, physiology, engineering and computer science. An extensive program included keynote presentations by world leaders in cognitive neuroscience as well as symposia, talk and poster sessions over the three and a half days. Presentations were based on a broad range of methodologies including EEG/MEG, TMS, fMRI/MRI/DTI, psychophysics, galvanic skin response and psychopharmacology. The overwhelming success of the conference was due to the outstanding national and international researchers who presented and attended, providing a unique opportunity to establish and strengthen international research relationships.



*Professor Stanislas Dehaene (Collège de France)*

# OUTREACH + *Links*

## Kanazawa Institute of Technology, Japan and the Australian Hearing Hub



*Artist impression of the Australian Hearing Hub*

The KIT-Macquarie Brain Research Laboratory currently houses two MEG brain imaging systems, one for adults and one for children. MEG is short for magnetoencephalography, which is a brain imaging technique that measures the minute magnetic fields generated by the human brain whenever information is being processed.

Importantly, a MEG system is a 'passive' device and is not harmful in any way. In addition, the MEG sensors are positioned away from the head, enabling quick set up, and minimizing the kind of discomfort that is experienced using other brain imaging devices. These factors make MEG an ideal technique for use with children and for individuals with cognitive disorders.

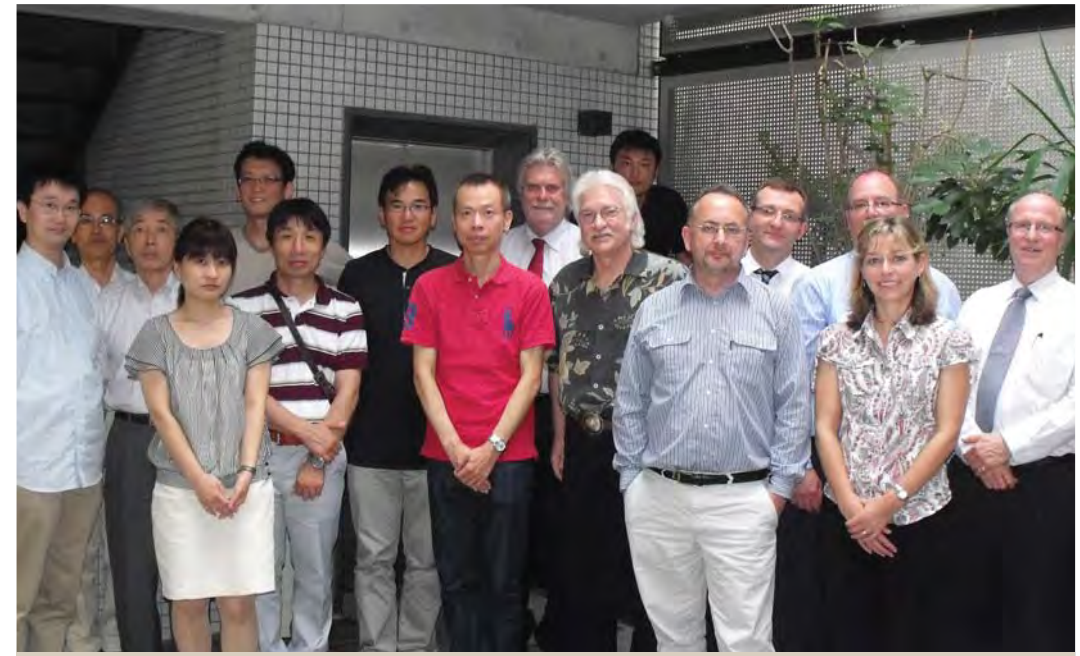
This unique research facility was made possible through the academic collaboration between Macquarie University and the Kanazawa Institute of Technology (KIT) along with KIT's industrial partner, the Yokogawa Electric Corporation. KIT is internationally known for its ground-breaking contributions to the cognitive neurosciences especially in the development of MEG-based measures of cognitive processing. The MEG systems at Macquarie University were funded from several ARC schemes, and the world's first Child MEG system was opened on the 27 November 2008.

Equipped with one of the few MEG systems in the world designed for use with children, our researchers can uniquely explore phenomenon such as language acquisition and auditory processing in children who are too young to perform the kinds of behavioural tasks that are commonly used with older children and with adults. Using the child MEG system, researchers are able, for the first time, to directly measure children's brain responses when they are reading, looking at pictures, or listening to speech. As the children's brain responses are being recorded, the child is not required to perform any complex behavioural task, allowing us to gather information about children's cognitive processing at the earlier stages of development than ever before.

*Using the child MEG system, researchers are able, for the first time, to directly measure children's brain responses when they are reading, looking at pictures, or listening to speech.*

MEG systems are expensive to operate, however, because the sensors that record the tiny brain signals must be cooled by liquid helium to an extremely low temperature. Moreover, the liquid helium is constantly being converted to gas, and must be re-cooled or new liquid helium must be supplied. Our Centre secured funding through the NSW Government Science Leveraging Fund to develop an innovative new system to recover helium gas and convert it back into liquid form. This helium recovery project will make MEG brain imaging systems cheaper to run, and adds to the sustainability of our natural resources, by recovering the helium rather than allowing it to simply evaporate into the atmosphere. The CCD is collaborating with CSIRO in the development of this system because CSIRO has expertise in working with the kinds of sensors used in MEG systems, which is a prerequisite to the design and construction of an optimal system for helium recovery.

During 2011, a visiting team travelled to Tokyo, Japan to initiate discussions for building the helium recovery system and a new magnetically shielded room. This trip was made in preparation for the relocation of the KIT-Macquarie Brain Research Laboratory in 2012 from its off-campus location at North Ryde into the new Australian Hearing Hub at Macquarie University.



*From left to right: Associate Professor Yoshiaki Adachi (KIT), Visiting Professor Junichi Hatta (KIT), Professor Hisanao Ogata (KIT), Miki Kawabata (KIT), Masakazu Miyamoto (KIT), Professor Masanori Higuchi (KIT), Professor Jun Kawai (KIT), Professor Gen Uehara (KIT), Alan O'Brien (MQ), Professor Stephen Crain (CCD), Daisuke Oyama (KIT), Associate Professor Blake Johnson (CCD), Adrian Cryer (Cochlear), Wayne Symons (Watpac), Dr Emma Mitchell (CSIRO), and David Varvel (CCD) during the Tokyo meetings.*

# Belief Formation

## Cumberland Hospital

Dr Pamela Marsh runs two training programs at Cumberland Hospital, Mental-State Reasoning training (MSRT) and Emotion Recognition training (ERT). In addition, she organises and chairs the graduation ceremonies for every graduating class. To date, five ceremonies have been held. Participants at these ceremonies have included the participants in the Life Skills program at Cumberland Hospital. All participants are awarded a certificate of completion. Recent award presenters include Professors Max Coltheart and Anne Castles of the CCD. These ceremonies not only acknowledge the achievements of the participants but they also showcase CCD research to the broader community. Dr Marsh also recently established a computer donation program. As part of this program, redundant computers from CCD are donated to Life Skills in Cumberland Hospital for use by consumers within the rehabilitation services. These computers allow consumers to learn computer skills that could not be funded by the hospital.

*Emeritus Professor Max Coltheart, Dr Pamela Marsh, Kelly-Anne Martinez (Rotary) and Agnes McMillan (East Cluster Mental Service) at the December graduation ceremony*

Dr Marsh also serves in an informal role as a consultant in rehabilitation, assessment, and statistics to clinical staff at Cumberland Hospital. She was instrumental in helping Mark Fallon (Clinical Nurse Consultant for Acute Care) and his colleagues in submitting a successful conference abstract to the Australasian Society for Psychiatric Research, held in Sydney December 2010. The presentation described the "Trauma Informed Care" model which provided the impetus to include measures of psychological trauma into our study, enabling us to proceed with a treatment program that compliments the existing treatment protocols at the Sydney West Area Health Service. In this way, we are able to inform clinicians at the service about how to incorporate programs we have developed in the services they provide.

# Language

## Indigenous Australian languages

Professor Katherine Demuth is investigating the nature of child speech and child-directed speech in Aranda which is an Australian indigenous language. As many indigenous children perform poorly at school, a better understanding of the language environment, and children's developing linguistic skills, are needed as a first step towards addressing the language disorders that are found in this population. This project has important implications for the development of intervention programs that enhance school achievement by indigenous children.

Professor Stephen Crain is leading another outreach project within the Language Program. This project is designed to bring together linguists who are trying to preserve indigenous languages and indigenous musicians who are also trying to preserve their languages through songs, i.e., singing in language. In May, he organised a meeting that included Dr Stephen Morey (Research Centre for Linguistic Typology, La Trobe University), Philip Wales (Triple-R Melbourne Independent Radio) and several others to discuss ways to meet the goals of the project. In November, Stephen Crain and Phil Wales met again and made several additional contacts at the Melbourne Australasian World Music Expo. This Expo is one of the country's most extensive music industry conferences, granting members of the local music scene unparalleled access to international festival directors, booking agents, managers and music media.

## Beijing Language and Culture University

An on-going project at Macquarie University has been incorporated into the Language Program, building on extensive research collaboration between Beijing Language and Culture University (BLCU) and Macquarie University, officially established in 2008. Professor Liqun Gao from BLCU, Professor Stephen Crain and Associate Professor Rosalind Thornton have several research projects underway which add to our understanding of the development of logical reasoning in children acquiring Mandarin Chinese and children acquiring English. This has resulted in annual academic conferences, lecture series, scholar exchanges and external grant funding from both the Chinese National Social Science Foundation and the Australian Research Council. Most recently, the collaboration led to a successful $2 million grant from the Chinese government to Professor Liqun Gao to install a child MEG system at BLCU, the first such system in China.

## Regional universities

As part of its outreach program, the CCD has initiated collaborations with regional universities. On 5 August 2011, the University of New England's Language and Cognition Research Centre (LCRC) sponsored a research workshop by CCD Director, Distinguished Professor Stephen Crain, and KIT-MQ Brain Research Laboratory Director, Associate Professor Blake Johnson. The purpose of the workshop was to inform LCRC members about the CCD and to identify areas of common research interest between the two centres. The idea for the workshop arose from discussions between Macquarie University DVC(R) Professor Jim Piper and University of New England's DVC(R) Professor Annabelle Duncan aimed at strengthening research links between Macquarie University and the University of New England (UNE) in the areas of linguistics and cognitive science.

The LCRC group at UNE has one CCD Chief Investigator, Emeritus Professor Brian Byrne (Reading Program) and an Associate Investigator, Associate Professor Drew Khlentzos (Language Program). A major outcome of the workshop was the identification of the work of an early career researcher in second language production, UNE linguist Dr Inés Antón-Méndez as an area of interest for the CCD Language Program. Dr Inés Antón-Méndez was subsequently invited to become a CCD Associate Investigator. All three of these CCD members from UNE met with Emeritus Professor Noam Chomsky when he visited Sydney in November. Finally, Professor Stephen Crain has invited Emeritus Professor Brian Byrne to a meeting in March 2012 of the National Committee on Brain and Mind, which Crain chairs, to seek support for a joint CCD/UNE initiative: Cognitive Science in the Public Interest.

## Speech pathology and clinical neuropsychology

Professor Lyndsey Nickels has maintained a longstanding collaboration with clinicians in the Speech Pathology Service at Royal Rehabilitation Centre Sydney (RRCS), with St. Joseph's Hospital and with War Memorial Hospital. This collaboration has resulted in external grant funding, and continues to generate publications. In addition, the research collaboration enhances the clinical and theoretical expertise of the clinicians who are involved. Professor Nickels regularly meets with clinicians at RRCS, providing professional development seminars and informal discussion.

Professor Nickels, Dr Britta Biedermann and Dr Saskia Kohnen have previously supervised research projects in conjunction with courses in the Masters of Speech Pathology program, and in courses in the Masters of Clinical Neuropsychology program. These research projects equip future clinicians with the skills needed to become clinical researchers. Similarly, the CCD actively encourages practicing clinicians to undertake clinical research, to become research active by working as research assistants, and to enrol for postgraduate research degrees. Professor Nickels is actively involved in collaboration or supervision of all three kinds of researchers, including Taylor (a clinical researcher), Mason (a research assistant), and Fieder, Colenbrander and Miller-Amberber (PhD candidates at the CCD).

Professor Nickels also continues to serve as the invited Academic member of the NSW Speech Pathology Evidence Based practice group (Adult Language). This group meets bi-monthly to critically review evidence related to clinical topics. Professor Nickels also contributes to professional development workshops for several of the NSW health regions and for Speech Pathology Australia.

The CCD also serves as a resource for speech pathologists and clinical neuropsychologists on an ad-hoc basis. Clinicians are encouraged to use Centre facilities for discussions and to seek advice in the assessment and rehabilitation of clients. Clinicians ring, email and visit the CCD for these purposes, and CCD staff provide seminars/professional development courses on request. To cite just one example, in May Professor Nickels offered a professional development workshop for Speech Pathology Australia in Brisbane: Assessment and treatment of Developmental and Acquired Disorders of reading and spelling.

## International Doctorate in Experimental Approaches to Language and Brain (IDEALAB)

Macquarie University is the first Australian University to be named as a partner in a prestigious Erasmus Mundus Joint Doctorate Program known as IDEALAB (International Doctorate in Experimental Approaches to Language and Brain). The IDEALAB program is funded by the European Commission's Education, Audiovisual and Culture Executive Agency, in which Macquarie joins four European Universities (Potsdam, Germany; Groningen, Netherlands; Trento, Italy; Newcastle, UK). This is an exciting new international joint PhD program where doctoral candidates spend time in two or more of the member universities and attend annual summer and winter schools held at each of the partner institutions. Research undertaken by doctoral candidates focuses on the neurocognitive mechanisms involved in language learning, language use and language re-learning in linguistically impaired populations.

The Macquarie node of IDEALAB is directed by Professor Lyndsey Nickels with supervisors drawn from the CCD Language Program, and more widely across the university. Doctoral candidates may spend from 3 to 12 months at Macquarie as part of their studies. Applications are invited every November for enrolment in the program beginning in the following October. The first cohort of students will start in October 2012.

For further details please see the IDEALAB website: www.em-idealab.com

*From left to right: Professor Dr Barbara Höhle - Center of Excellence Cognitive Science, Potsdam University, Germany, Professor Lyndsey Nickels – ARC Centre of Excellence in Cognition and its Disorders, Macquarie University, Robyn Bishop – HDR Manager, Faculty of Human Sciences, Macquarie University and Dr Yi Ren – Director, Higher Degree Research Office, Macquarie University*

# Memory

## Rotary and dementia community groups

Marshall Dalton (PhD candidate, UNSW) is the recipient of the Australian Rotary Health Ron Nichol Dementia Scholarship. He is involved with a number of Australian Rotary Health community outreach activities, and makes regular visits to the Rotary club of Glenhaven to update members of the club on the progress of his research and to give presentations aimed at informing members of the club about the brain and about different types of dementia. Marshall also delivered a presentation in August about dementia and his research at the Australian Rotary Health "hat day" event hosted at the University of New South Wales. This annual event is aimed at increasing public awareness of mental health issues and disorders of cognition.

Additionally, Frontier, a clinical research group in Sydney focused on the study of frontotemporal dementia (FTD) and related disorders, ran a 14-week program at the Neuroscience Research Australia Institute (2 August – 1 November 2011). The program was an intervention group for carers of people with frontotemporal dementia and these sessions were facilitated by a dementia clinical nurse consultant.

## High school students

Dr Donna Rose Addis is passionate about sharing her knowledge and expertise in memory research with high school students. As part of the New Zealand Brain Awareness Week, she participated in high school graduation and prize ceremonies. She was also involved in the LENScience Bio-Med Summer School, a program to help students from low socioeconomic backgrounds as well as Maori and Pacific students who are about to start their university studies in biology and bio-medical sciences. Donna was also involved in the filming of a segment on memory for the science documentary "Through the Wormhole with Morgan Freeman" (Discovery Science Channel), http://science.discovery.com/ tv/through-the-wormhole/

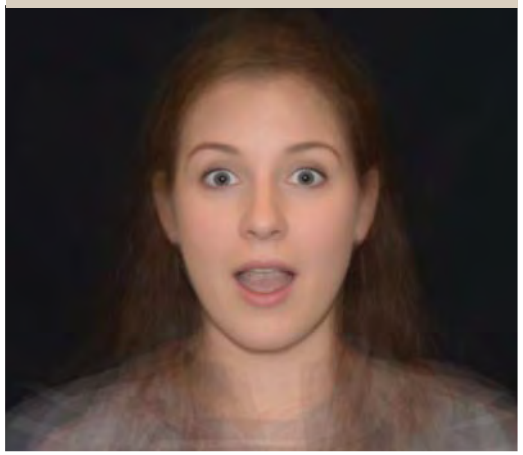
Marshall Dalton (PhD candidate, UNSW) participated in the "Scientists in Schools" program run by the CSIRO. He visited high school science classes and taught students about the brain and the nervous system, covering topics that ranged from neuroanatomy to the neuroscience of memory, language and personality. This program is aimed at helping to engage and motivate students in learning science, and to broaden their awareness of the exciting careers available in the sciences. He has also been involved in helping to organise school visits and to guide visiting high school groups through Neuroscience Research Australia, and to explain to them the different types of research being conducted there.

# Person Perception

## High school students and community groups

Dr Linda Jeffery hosted two Year 10 students as part of a one-week work experience program designed to enhance their understanding of cognitive science and psychology. This program establishes a link between leading researchers and students who may choose to pursue research careers in cognitive science.

Dr Romina Palermo delivered a presentation about Psychology to secondary school students. High school students, their families and their teachers were given the opportunity to understand more about choosing Psychology as a career, and learned how a degree in Psychology can provide both clinical and academic/research possibilities.



*Photos of work experience students which have been combined to create 'average' neutral (top) and surprised (bottom) facial expressions*

Professor Gillian Rhodes was involved in a segment on face perception for the science documentary "Through the Wormhole with Morgan Freeman" (Discovery Science Channel), http://science.discovery.com/tv/through-the-wormhole/

Our researchers also engage with the public through websites which provide information about their research and current projects. Dr Jon Brock has been running a blog called Cracking the Enigma: An Autism Research Blog, as a way to communicate with those associated with autism spectrum disorders: http://crackingtheenigma.blogspot.com.au. Dr Romina Palermo engages with the community through the Prosopagnosia Register: http://www.maccs.mq.edu.au/research/projects/prosopagnosia/. This is an online register for people with prosopagnosia, which is a difficulty in recognising faces. This web-based resource enables people who suffer from prosopagnosia to make contact with leading experts in the field and to participate in research. In turn, we provide research updates and answer queries.

We also are involved in the Western Australian Register for Autism Spectrum Disorders, providing ongoing participation in database management and liaising with researchers and parents: http://www.autismwa.org.au/



# Reading

## Community groups

Members of the Reading Program are actively involved in a variety of community groups focused on learning to read and on reading difficulties. Professor Anne Castles is the Chair of the Steering Committee for the NSW Centre for Effective Reading. This committee provides support for rural and remote primary-school students with complex reading difficulties and their teachers. Professor Castles and Professor Lyndsey Nickels are both members of the Council for Learning Difficulties Australia (Nickels is the past President). Professor Lyndsey Nickels also serves as an Advisory Committee Member and Management Committee member of the NSW Department of Health Enquiry into the "Assessment of children with learning difficulties".

Emeritus Professor Brian Byrne has been invited to a meeting of the Dutch Dyslexia Program (DDP), which is in the final stages of its 10-year project funded by the Netherlands Organisation for Scientific Research (NWO).

The large Reading Training Study is lead by Associate Professor Genevieve McArthur. This study provides treatment to all eligible children with reading difficulties, as well as free assessments, written reports, and ongoing advice. In addition, a Reading Program newsletter has been distributed to all participating schools, as well as to interested teachers, clinicians and professionals.

## Intrepica

Researchers in the CCD Reading Training Study are collaborating with the team at Intrepica, an online reading training program developed in Queensland. Based on the findings from human and animal training studies, we know that learning any task has four necessary ingredients: attention, motivation, repetition, and feedback. Based on the findings from reading research, we know that learning to read new words requires two special skills: the ability to use the letter-sound rules (i.e., phonics) and the ability to read words by sight. Intrepica is a training program that is designed to impart all of these necessary elements: It engages students' attention with sophisticated graphics; it motivates students' to practice their reading skills by rewarding them with points that can be used to buy clothes for their avatar or buy online games; it encourages students to repeat exercises many times, to fine-tune the skills that they have mastered (and earn more points!); and it provides highly engaging feedback for students, as they progress. Finally, Intrepica includes dozens of exercises that train students' letter-sound reading and their sight-word reading.

## MOTIf

The Macquarie Online Test Interface (MOTIf; www.motif.org.au) is an online facility designed to automatically administer, score, and provide reports for cognitive tests developed by researchers in the Reading Program. These researchers include Associate Professor Genevieve McArthur, Professor Anne Castles, Dr Saskia Kohnen, and Thushara Anandakumar, in collaboration with Pip Jones from Deepend. The MOTif tests are available online at no charge to registered teachers, clinicians and researchers. The test results of each MOTIf user are stored in a secure and private database. MOTIf includes seven cognitive tests, available in a range of fully automated and pdf forms, with automatically generated standardised scores (age norms).

In February 2011, there were over 600 MOTif users. By October 2011, this number almost doubled to 1100 users, with over 1300 visits per month accessing the 7 tests available on the website.

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**Emeritus Professor Max Coltheart**
Belief Formation Program Leader

**Distinguished Professor Stephen Crain**
Director and Language Program Leader

**Professor John Hodges**
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**Professor Gillian Rhodes**
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**David Varvel/Dr Lisa Yen**
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Macquarie University

**Dr Anina Rich**
BSc Monash, MPsych Melb, PhD Melb
Department of Cognitive Science,
Macquarie University

**Dr Serje Robidoux**
B Math UOFW, MA UOFW, PhD UOFW
Department of Cognitive Science,
Macquarie University

**Professor Leigh Simmons**
BSc Nottingham, PhD Nottingham
Centre for Evolutionary Biology,
University of Western Australia

**Dr Karen Smith-Lock**
BSc Toronto, MHSc Toronto, PhD Conn
Department of Cognitive Science,
Macquarie University

**Dr Paul Sowman**
BPhty Otago, PGDipHSci Auckland, PhD Adelaide
Department of Cognitive Science,
Macquarie University

**Professor John Sutton**
BA Oxford, PhD Syd
Department of Cognitive Science,
Macquarie University

**Dr Graciela Tesan**
BA UNComa, PhD Maryland
Department of Cognitive Science,
Macquarie University

**Dr Jeremy Tree**
BA Sussex, MSc Cardiff, PhD Cardiff
Department of Psychology,
Swansea University, UK

**Associate Professor Mark Williams**
BSc Monash, PhD Monash
Department of Cognitive Science,
Macquarie University

**Dr Nan Xu**
BA UWS, PhD UWS
Department of Linguistics,
Macquarie University

**Dr Ivan Yuen**
BA Reading, MSc Edinburgh, PhD Edinburgh
Department of Linguistics,
Macquarie University

**Dr Peng Zhou**
BA BLCU, MA BLCU, PhD Macq
Department of Cognitive Science,
Macquarie University

## Administration

**Chief Operations Officer**
**David Varvel**
BA Macq, MComm UNSW
Department of Cognitive Science,
Macquarie University

**Dr Lisa Yen**
BPsych Macq, PhD Macq
Department of Cognitive Science,
Macquarie University

**Financial Administrator**
**Katie Webb**
BCom-Accg Macq
Department of Cognitive Science,
Macquarie University

**KIT-Macquarie Brain Research Laboratory Manager**
**Dr Graciela Tesan**
BA UNComa, PhD Maryland
Department of Cognitive Science,
Macquarie University

**Recruitment and Assessment Coordinator**
**Dr Marion Kellenbach**
BA Macq, PhD Macq
Department of Cognitive Science,
Macquarie University

**Research Administrator**
**Lesley McKnight**
Department of Cognitive Science,
Macquarie University

**Systems Administrator**
**Craig Richardson**
BSc Macq
Department of Cognitive Science,
Macquarie University

**Executive Assistant**
**Robin Blumfield**
Department of Cognitive Science,
Macquarie University

**Laboratory Managers**
**Sarah Homewood**
Neuroscience Research Australia
**Libby Taylor**
BA UWA
School of Psychology,
University of Western Australia

**Administrative/Technical Assistants**
(6 casual)

*From left to right: Robin Blumfield, Katie Webb, Dr Lisa Yen*



# RESEARCH *Students*

The ARC Centre of Excellence in Cognition and its Disorders (CCD) places a great deal of importance on its higher degree research program and regularly hosts seminars/workshops/conferences for both postgraduates and staff with national and international guest speakers. These academic meetings are discussion-oriented and focus on topics relevant to the work of the Centre, with local and overseas researchers presenting papers for discussion and allowing Centre students to interact with authorities in their fields of research.

We provide the opportunity to undertake a multidisciplinary PhD from a wide range of backgrounds including Psychology, Linguistics, Speech Pathology, Psychiatry, Clinical Psychology, Philosophy, Audiology, Artificial Intelligence and Experimental Phonetics/ Laboratory Phonology. Most PhD candidates complete their thesis in the journal article format, allowing them to submit articles ready for publication prior to thesis submission. This gives students the opportunity to build their research track record during their PhD candidature, and places them well for future academic employment.

Each of the three nodes, Macquarie University, University of New South Wales and University of Western Australia, have scholarships available to fund postgraduate PhD candidates of exceptional research promise as they undertake their research project at the CCD.

**Congratulations** to our 2011 PhD graduands: **Dr Anna Elisabeth (Lisi) Beyersmann**, Morphological processing in adults and children during visual word recognition; **Dr Yatin Mahajan**, Maturation of event-related potentials across adolescence; **Dr Davide Rivolta**, Face processing in typical and congenitally prosopagnosic adults: Behavioural and neuroimaging investigations; **Dr Charles Stone**, Remembering and forgetting: The menemonic consequences of selective voicing and silence in social interactions; **Dr Yi (Esther) Su**, Disjunction and Downward Entailment in Child Mandarin: An Experimental Investigation into the Acquisition of Semantic Universals; **Dr Francesco Alessio Ursini**, The language of space: The acquisition and interpretation of spatial adpositions in English; **Dr Varghese Peter**, Neural processing of stress and phrase boundaries in speech and music and our 2011 DClinNeuro graduand **Dr Deborah Arguedas**, Olfactory hallucinations in schizophrenia: A neuropsychological investigation.

*Dr Lisi Beyersmann with her supervisor Professor Anne Castles after her graduation ceremony*

*Dr Yatin Mahajan with his supervisor Associate Professor Genevieve McArthur*

*Dr Varghese Peter during his graduation ceremony*

This year our Centre recruited 20 new PhD and DClinPsych students across our three nodes: Bianca De Wit, Leidy Castro-Meneses, Frances Caulfield, Danielle Collenbrander, Erika Contini, Aline Cordonnier, Marshall Dalton, Andrew Etchell, Anne Jäger, Janna (Trudy) Krajenbrink, Fiona Kumfor, Samantha Leivers, Christopher McCarroll, Anastasiya Romanova, Wei He, Robert Ross, Sharon Savage, Xenia Schmalz, Naiomh Stewart, and Marina Trakas (9 domestic and 11 international students).

# PhD Candidates

**Nobu Akagi**
PhD, Macquarie University
Distinguished Professor Stephen Crain and
Associate Professor Rosalind Thornton
*Interpretation of disjunction in human language.*

**Shahd Al-Janabi**
PhD, Macquarie University
Dr Matthew Finkbeiner and Dr Jason Friedman
*Neuronal global workspace theory.*

**Bhuvanesh Awasthi**
PhD, Macquarie University
Associate Professor Mark Williams and
Dr Jason Friedman
*An investigation into visually guided reaching to low spatial frequency faces.*

**Samantha Baggott**
PhD, Macquarie University
Associate Professor Mark Williams, Dr Anina Rich and
Dr Romina Palermo
*Processing facial expressions of emotion.*

**Erin Banales**
PhD, Macquarie University
Associate Professor Genevieve McArthur and
Dr Saskia Kohnen
*Working memory training in children with dyslexia.*

**Adam Bentvelzen**
PhD, Macquarie University
Associate Professor Greg Savage,
Associate Professor Genevieve McArthur and
Professor William Thompson
*Hemispheric specialisation for nonverbal memory processing.*

**Anna Elisabeth (Lisi) Beyersmann**
PhD, Macquarie University
Professor Anne Castles and
Emeritus Professor Max Coltheart
*Morphological processing in visual word recognition in children and adults.*

**Benjamin Börschinger**
PhD, Macquarie University
Professor Mark Johnson and
Professor Katherine Demuth
*Computational models of human language acquisition.*

**Marissa Calleja**
PhD, Macquarie University
Dr Anina Rich and Dr Matthew Finkbeiner
*Inhibitory processes in selective attention and working memory.*

**Leidy Casto-Meneses**
PhD, Macquarie University
Associate Professor Blake Johnson
and Dr Paul Sowman
*Temporal cortical dynamics in two disorders of childhood development: Specific Language Impairment (SLI) and Developmental Stuttering (DS).*

**Yao-Ching (Rocco) Chiu**
PhD, Macquarie University
Dr Anina Rich and Dr Matthew Finkbeiner
*The influence of language experience on synaesthesia: Evidence from psychophysics and cross-language comparison.*

**Danielle Collenbrander**
PhD, Macquarie University
Dr Saskia Kohnen, Professor Lyndsey Nickels and
Dr Karen Smith-Lock
*Exploring the role of vocabulary in reading comprehension.*

**Lincoln Colling**
PhD, Macquarie University
Professor William Thompson, Professor John Sutton
and Associate Professor Mark Williams
*Auditory scene analysis.*

**Michael Connors**
PhD, Macquarie University
Emeritus Professor Max Coltheart and
Associate Professor Robyn Langdon
*Modelling the mirrored-self misidentification delusion with hypnosis.*

**Aline Cordonnier**
PhD, Macquarie University
Associate Professor Amanda Barnier and
Professor John Sutton
*Autobiographical, social and collective memory.*

**Marshall Dalton**
PhD, University of New South Wales
Dr Olivier Piguet and Dr Michael Hornberger
*Characterisation of episodic memory deficits in frontotemporal dementia.*

**Peter de Lissa**
PhD, Macquarie University
Associate Professor Genevieve McArthur,
Professor Anne Castles and Dr Jon Brock
*Using fixation-related potentials to investigate cognitive processes.*

**Bianca de Wit**
PhD, Macquarie University
Associate Professor Sachiko Kinoshita and
Associate Professor Genevieve McArthur
*A fresh look on semantic priming effects.*

**Andrew Etchell**
PhD, Macquarie University
Dr Paul Sowman and
Associate Professor Blake Johnson
*Brain dynamics and sensorimotor integration associated with speech.*

**Nora Fieder**
PhD, Macquarie University
Professor Lyndsey Nickels and Dr Britta Biedermann
*Number representation for count and mass nouns: Evidence from brain-impaired and normal speakers.*

**Vasfiye Geçkin**
PhD, Macquarie University
Professor Katherine Demuth, Associate Professor
Rosalind Thornton and Professor Barbara Höhle
(University of Potsdam, Germany)
*Bilingual language acquisition.*

**Wei He**
PhD, Macquarie University
Associate Professor Blake Johnson, Dr Jon Brock and
Associate Professor Wei Wang (Zhejiang University, China)
*Development of early face processing in the human brain.*

**Jan (Richard) Heersmink**
PhD, Macquarie University
Professor John Sutton and Professor Max Coltheart
*Cognitive science and philosophy.*

**Sharpley Hsieh**
PhD, University of New South Wales
Dr Olivier Piguet and Professor John Hodges
*Memories and feelings of music in the dementias.*

**Aijun Huang**
PhD, Macquarie University
Distinguished Professor Stephen Crain and
Associate Professor Rosalind Thornton
*Acquisition of polarity-sensitive items in Mandarin speaking children.*

**Anne Jäger**
PhD, Macquarie University
Associate Professor Robyn Langdon and
Associate Professor Amanda Barnier
*Meta-cognitive features associated with schizophrenic delusion in obsessive compulsive disorders with and without delusional ideation.*

**Janna (Trudy) Krajenbrink**
PhD, Macquarie University
Professor Lyndsey Nickels and Dr Saskia Kohnen
*Generalisation effects in treatment of acquired language disorders.*

**Neha Khetrapal**
PhD, Macquarie University
Professor Katherine Demuth and Dr Jon Brock
*Perspective taking in autism spectrum disorders language versus cognition.*

**Loes Koelewijin**
PhD, Macquarie University
Dr Anina Rich and Professor Krish Singh (Cardiff University)
*Neural mechanisms of visual attention and saliency.*

**Fiona Kumfor**
PhD, University of New South Wales
Dr Olivier Piguet and Professor John Hodges
*Emotion processing in frontotemporal dementia.*

**Linda Larsen**
PhD, Macquarie University
Associate Professor Genevieve McArthur,
Dr Saskia Kohnen, Professor Lyndsey Nickels and
Professor Anne Castles
*The effects of treating the non-lexical reading route.*

**Samantha Leivers**
PhD, University of Western Australia
Professor Gillian Rhodes and
Professor Leigh Simmons
*How do men judge and respond to perceived female infidelity?*

**Min Liao**
PhD, Macquarie University
Associate Professor Rosalind Thornton and
Distinguished Professor Stephen Crain
*The acquisition of 'Shenme' in Mandarin Chinese.*

**Yatin Mahajan**
PhD, Macquarie University
Associate Professor Genevieve McArthur,
Distinguished Professor Stephen Crain and
Associate Professor Blake Johnson
*Maturation of event-related potentials across adolescence.*

**Lars Marstaller**
PhD, Macquarie University
Associate Professor Blake Johnson and
Dr Paul Sowman
*Gestures and cognition.*

**Christopher McCarroll**
PhD, Macquarie University
Professor John Sutton and Dr Richard Menary
*Memory and the self.*

**Jonathan McGuire**
PhD, Macquarie University
Emeritus Professor Max Coltheart,
Associate Professor Robyn Langdon and
Professor Catriona MacKenzie
*Moral decision making.*

**Amanda Miller Amberber**
PhD, Macquarie University
Professor Lyndsey Nickels,
Emeritus Professor Max Coltheart,
Distinguished Professor Stephen Crain and
Associate Professor Rosalind Thornton
*Language switching in bilingual aphasia and bilingual dementia.*

**Vishnu Nair**
PhD, Macquarie University
Professor Katherine Demuth and
Professor Lyndsey Nickels
*Executive function and novel word learning in bilinguals.*

**Tommy Ng**
PhD, Macquarie University
Associate Professor Blake Johnson, Dr Jon Brock and
Dr Paul Sowman
*Magnetoencephalographic studies of human brain function.*

**Anna Notley**
PhD, Macquarie University
Distinguished Professor Stephen Crain and
Associate Professor Rosalind Thornton
*The acquisition of semantics from a cross-linguistic perspective.*

**Varghese Peter**
PhD, Macquarie University
Associate Professor Genevieve McArthur,
Professor William Thompson,
Distinguished Professor Stephen Crain,
Dr Graciela Tesan and
Emeritus Professor Max Coltheart
*Neural processing of stress and phrase boundaries in speech and music.*

**Vince Polito**
PhD, Macquarie University
Associate Professor Amanda Barnier,
Emeritus Professor Max Coltheart, Dr Rochelle Cox
and Dr Erik Woody (University of Waterloo, UK)
*Agency and hypnosis.*

**Stephen Pritchard**
PhD, Macquarie University
Emeritus Professor Max Coltheart and
Professor Anne Castles
*Modelling the way children learn to read: Augmenting the dual-route cascaded (DRC) model with an adaptive resonance theory (ART) system of unsupervised learning.*

**Monica Ricci**
PhD, Macquarie University
Associate Professor Greg Savage and Dr Laurie Miller
*Plasticity of the human language areas in patients with arterovenous malformations and patients with low grade glioma: A functional imaging study.*

**Anastasiya Romanova**
PhD, Macquarie University
Professor Lyndsey Nickels and Dr Kati Renvall
*Cross linguistic study of economy strategies in aphasic speech.*

**Melanie Rosen**
PhD, Macquarie University
Professor John Sutton and Professor Peter Menzies
*Philosophy of dreams.*

**Robert Ross**
PhD, Macquarie University
Associate Professor Robyn Langdon
*Cognitive theory of delusion.*

**Sharon Savage**
PhD, University of New South Wales
Professor John Hodges, Dr Olivier Piguet and Dr
Michael Hornberger
*Cognitive retraining in frontotemporal dementia (FTD) and related disorders.*

**Stephane Savanah**
PhD, Macquarie University
Professor John Sutton, Professor Peter Menzies, Dr
Mitch Parsell and Dr Glenn Carruthers
*The threshold of self-consciousness.*

**Xenia Schmalzl**
PhD, Macquarie University
Professor Anne Castles and Dr Eva Marinus
*How do children learn to read? Unravelling the development of automatic word recognition.*

**Amanda Selwood**
PhD, Macquarie University
Associate Professor Amanda Barnier and Professor
John Sutton
*Collaborative recall in strangers, siblings and twins.*

**Usha Sista**
PhD, Macquarie University
Associate Professor Mark Williams and
Dr Jason Friedman
*The involvement of mirror systems in mimicking learning.*

**Naiomh Stewart**
PhD, University of Western Australia
Professor Gillian Rhodes, Dr Linda Jeffery and
Dr Liz Pellicano
*Emotion recognition in children with Autism (draft).*

**Yi (Esther) Su**
PhD, Macquarie University,
Distinguished Professor Stephen Crain,
Associate Professor Rosalind Thorton and
Associate Professor Drew Khlentzos
*Disjunction and downward entailment in child Mandarin: An experimental investigation into the acquisition of semantic unviersals.*

**Marie (Misia) Temler**
PhD, Macquarie University
Associate Professor Amanda Barnier,
Professor John Sutton and Dr Doris McIlwain
*Social contagion of autobiographical memory.*

**Ekaterina Tomas**
PhD, Macquarie University
Professor Katherine Demuth and
Associate Professor Rosalind Thornton
*Morphological acquisition in specific language impairment.*



**Marina Trakas**
PhD, Macquarie University
Professor John Sutton and Professor Jerome Dokic
(L'Ecole des hautes etudes en sciences sociales,
France)
*Theories of memory implications for metacognition.*

**Leslie van der Leer**
PhD, Royal Holloway, University of London
Dr Ryan McKay and Dr Lyn Ellett (Royal Holloway,
University of London)
*A combined behavioural economic and cognitive neuropsychiatric approach to delusions.*

**Mark Vida**
PhD, McMaster University
Professor Daphne Maurer
*The development of sensitivity to eye gaze.*

**Jennifer Walsh**
PhD, McMaster University
Dr Mel Rutherford (McMaster University, Canada)
*Examining face processing mechanisms in autism spectrum disorder.*

**Hua-Chen Wang**
PhD, Macquarie University
Professor Anne Castles,
Emeritus Professor Max Coltheart,
Associate Professor Genevieve McArthur and
Professor Lyndsey Nickels
*Reading and language skills.*

**Shu Hui Yau**
PhD, Macquarie University
Dr Jon Brock and Associate Professor Blake Johnson
*Cognitive and brain mechanisms of Autism.*

**Astrid Zeman**
PhD, Macquarie University
Dr Anina Rich and Associate Professor Mark Williams
*Computer models of human visual object perception.*

**Likan Zhan**
PhD, Macquarie University
Distinguished Professor Stephen Crain and
Dr Peng Zhou
*Are we logic? An experimental study of If-Conditional.*

**Regine Zopf**
PhD, Macquarie University
Associate Professor Mark Williams,
Emeritus Professor Max Coltheart and
Associate Professor Greg Savage
*Body illusions, body delusions and the human brain.*

## Combined Masters and PhD Candidates

**Louise Ewing**
PhD/MPsych(AppDev), University of Western Australia
Professor Gillian Rhodes and Dr Liz Pellicano
*The trouble with faces: Mechanisms underlying face processing atypicalities in Autism.*

**Emily Connaughton**
PhD/MClinNeuro, Macquarie University
Associate Professor Robyn Langdon, Emeritus
Professor Max Coltheart and Dr Nora Breen
*Delusions in traumatic brain injury.*

**Erika Contini**
PhD/MClinNeuro, Maquarie University
Associate Professor Mark Williams, Dr Jennifer Cornish,
Associate Professor Sharon Naismith (University of Sydney)
*Preventing depression and cognitive decline in the elderly: The effects of novel pharmacotherapies on white matter connectivity.*

**Tania Malouf**
PhD/MClinNeuro, Macquarie University
Associate Professor Robyn Langdon,
Associate Professor Arthur Shores,
Emeritus Professor Max Coltheart and Dr Kasey Metcalf
*Lack of insight after traumatic brain injury.*

**Genevieve Quek**
PhD/MClinNeuro, Macquarie University
Dr Matthew Finkbeiner and Dr Paul Sowman
*The role of attention in nonconscious processing: Comparing faces and non-faces.*

**Tracey Shaw**
PhD MClin Neuro, Macquarie University
Dr Melanie Porter, Associate Professor Robyn
Langdon and Emeritus Professor Max Coltheart
*Social processing in Fragile X Syndrome.*

**Alexandra Wilson**
PhD/MClinNeuro, Macquarie University
Associate Professor Robyn Langdon, Dr Kasey Metcalf
and Emeritus Professor Max Coltheart
*Cognitive rehabilitation in patients with acquired brain injury.*

## Doctoral Candidates

**Georgina Avery**
DCP/MSc, University of Sydney
Dr Suncica (Sunny) Lah and Dr Laurie Miller
*Autobiographical memory and emotion in patients with frontal lobe lesions.*

**Michel Gascoigne**
DCP/MSc, University of Sydney
Dr Suncica (Sunny) Lah and Dr Belinda Barton (University of Sydney)
*Long-term memory in children with epilepsy.*

**Meryn Lechowicz**
DCP/MSc, University of Sydney
Dr Suncica (Sunny) Lah and Dr Laurie Miller
*Remembering the past and constructing the future in patients with temporal lobe epilepsy.*

**Deepa Bapat**
DClinPsych, Macquarie University
Dr Nora Breen, Dr Laurie Miller and Dr Jennifer Batchelor
*Whole figure rotations in the Rey Complex Figure.*

**Jamie Campbell**
DClinPsych, Macquarie University
Dr Ilana Hepner (University of New South Wales), Dr Laurie Miller and Dr Jennifer Batchelor
*Age and sex effects of topographical memory.*

**Frances Caufield**
DClinPsych, University of Western Australia
Professor Gillian Rhodes
*Social judgments based on facial appearance in children with Autism (draft).*

**Zoe Fitzgerald**
DClinPsych, Macquarie University
Dr Laurie Miller, Dr Zoe Thayer and Dr Jennifer Batchelor
*The pathophysiology of accelerated long-term forgetting in Epilepsy.*

**Katie Leach**
DClinPsych, University of Western Australia
Professor Gillian Rhodes, Dr Linda Jeffery and Dr Liz Pellicano
*Does attention modulate face aftereffects in children with Autism?*

**Vince (Didier) Oxenham**
DClinPsych, Macquarie University
Associate Professor Greg Savage, Dr Jon Brock and Dr Domonic Rowe
*Eye movement abnormalities and dementia in Motor Neuron Disease.*

**Cliff Deyo**
DClinNeuro, Macquarie University
Associate Professor Robyn Langdon and Associate Professor Arthur Shores
*Semantic memory deficits in pre-prodromal psychosis.*

**Donna McCade**
DClinNeuro, Macquarie University
Associate Professor Greg Savage,
Dr Jennifer Batchelor and Associate Professor Sharon Naismith (University of Sydney)
*Social cognition and mild cognitive impairment.*

**Robyn Petersen**
DClinNeuro, Macquarie University
Associate Professor Robyn Langdon,
Dr Romina Palermo and Dr Pamela Marsh
*Social cognitive abilities of people with borderline personality disorder.*

**Shelley Simpson**
DClinNeuro, Macquarie University
Associate Professor Robyn Langdon and Dr Jennifer Batchelor
*Neuropsychological profile of very-late-onset schizophrenia versus late-onset psychotic depression versus chronic schizophrenia.*

## Masters Students

**Jordan Taylor**
MPhil, Macquarie University
Professor John Sutton and Dr Nicolas Bullot
*Imagination, imagery, perception and the self.*

**Kellie Maree Williamson**
MPhil, Macquarie University
Professor John Sutton,
Emeritus Professor Max Coltheart and Dr Nicolas Bullot
*Making sense of group thinking.*

**Jillian Attewell**
MClinNeuro, Macquarie University
Associate Professor Robyn Langdon
*Predictors of behavioural symptoms in Huntington's Disease.*

**Andrew Jones**
MClinNeuro, Macquarie University
Associate Professor Greg Savage
*Memory profiling in the early detection of Alzheimer's Disease.*

**Vanessa Leung**
MClinNeuro, Macquarie University
Associate Professor Greg Savage
*Masked priming of associate recognition.*

**Sicong Tu**
Masters, University of New South Wales
Dr Michael Hornberger and Dr Olivier Piguet
*Consolidation processes in episodic memory.*

## Honours Students

**Kiri Mealing**
BSpHSc (Hons), Macquarie University
Professor Katherine Demuth
*Phonological complexity in morphological acquisition.*



**Brooke Addison**
BSc-Psych (Hons), University of Western Australia
Professor Gillian Rhodes and Dr Linda Jeffery
*Does facial expression influence cone of gaze in 8-year-olds?*

**Grace Morley**
BSc-Psych (Hons), University of Western Australia
Professor Gillian Rhodes
*Judgements of unfaithfulness: Consensus, accuracy and cues.*

**Felice Smith**
BSc (Hons), Macquarie University
Associate Professor Mark Williams, Dr Anina Rich, Professor Stuart Graham, and Associate Professor Marie Herberstein
*'Filling-in' of stimuli at the physiological blind spot reflects lateral connections rather than feedback.*

**Nathan Caruana**
BPsych (Hons), Macquarie University
Dr Jon Brock
*Autistic traits and the ability to integrate context during reading: Assessing weak central coherence theory using eye-movement measures.*

**Laura Greenwood**
BPsych (Hons), Macquarie University
Associate Professor Veronika Coltheart
*Differential similarity effects in visual short-term memory tasks.*

**Hayley Smith**
BPsych (Hons), Macquarie University
Associate Professor Veronika Coltheart
*Single yes-no test and forced-choice tests: reconciling visual memory performance.*

**Eleni Avard**
BA Psych (Hons), University of Western Australia
Dr Linda Jeffery
*Are high socially anxious individuals more influenced by threatening expressions than low socially anxious individuals when integrating facial and vocal cues in emotion perception.*

**Nichola Burton**
BA Psych (Hons), University of Western Australia
Professor Gillian Rhodes
*Children use norm-based coding to visually represent facial expression.*

**Traci Carse**
BA Psych (Hons), Macquarie University
Associate Professor Robyn Langdon
*Delusion-proneness, self-reflection and rumination.*

**Nathan Collis**
BA Psych (Hons), Macquarie University
Associate Professor Sachiko Kinoshita and Dr Saskia Kohnen
*The role of spatial attention in reading.*

**Robert Ephraums**
BA Psych (Hons), Macquarie University
Associate Professor Robyn Langdon
*Neuropsychological correlates of psychopathic tendencies in the general population.*

**Sarah Haynes**
BA Psych (Hons), University of Western Australia
Dr Linda Jeffery and Professor Gillian Rhodes
*Judgments of trustworthiness from faces: Do children and adults judge alike?*

**Alice Priddis**
BA Psych (Hons), Macquarie University
Associate Professor Amanda Barnier
*Can remembering together with a long-term partner reduce age-related memory loss in older couples?*

**Allira Sazdanoff**
BA Psych (Hons), Macquarie University
Associate Professor Sachiko Kinoshita
*Morphological decomposition in masked priming.*

## Interns

**Rebecca Anderson**
3rd year Psychology intern, Macquarie University

**Kimberley Billera**
3rd year Psychology intern, Macquarie University

**Samantha Parker**
3rd year Psychology intern, Macquarie University

**Matthew Sampson**
3rd year Psychology intern, Macquarie University

**Lisa Wyburd**
3rd year Psychology intern, Macquarie University

## High School Students

**Jennifer Carecos**
Shenton College
Dr Linda Jeffery

**Anton Harris**
Redfield College
Associate Professor Amanda Barnier

**Keenan Pey**
St Luke's Grammar School
Dr Anina Rich

**Shane Rohan**
Shenton College
Dr Linda Jeffery

**Marina Saunders**
Fort Street High School
Dr Laurie Miller

**William Vu**
Fort Street High School
Dr Laurie Miller

**Julie Zhu**
Fort Street High School
Dr Laurie Miller

# COLLABORATIONS

*Researchers at the CCD have strong links with international and national researchers. In addition to the five national collaborating institutions and nine international partner institutions, researchers at the CCD have developed and maintained collaborations with research partners from over 100 institutions in 15 countries. This collaboration section highlights both the links between researchers within the CCD, and the connections with leading international and national researchers.*

**Dr Donna Rose Addis**
Dr Alison Adcock (Duke University, USA), on studies of autobiographical memory.

Dr Adam Brown (New York University School of Medicine, USA), on future thinking in PTSD.

Professor Emeritus Michael Corballis (University of Auckland, New Zealand), on MRI studies on future thinking.

Dr Kelly Giovanello (University of North Carolina, USA), on fMRI studies of autobiographical and episodic memory.

Associate Professor Elizabeth Kensinger (Boston College, USA), on fMRI studies of memory, emotion and aging.

Associate Professor Michelle Moulds (University of New South Wales), on autobiographical memory in depression.

Dr Shayna Rosenbaum (York University, Canada), on future thinking in developmental amnesia.

Professor Daniel Schacter (Harvard University, USA), on fMRI studies of future thinking in young and older adults.

Associate Professor Lynette Tippett (University of Auckland, New Zealand), on autobiographical memory and identity in aging, dementia and depression.

**Associate Professor Amanda Barnier**
Professor David Balota (University of Washington, USA), Dr Roger Dixon (University of Alberta, Canada), Professor Suparna Rajaram (Stony Brook University, USA) and Professor William Hirst (The New School, USA), with Associate Professor Greg Savage and Professor John Sutton on individual, collaborative, social and collective memory.

Dr Adam Brown (New York University School of Medicine, USA), on autobiographical and social memory, especially in trauma.

Dr Nora Breen (Royal Prince Alfred Hospital), Dr Lisa Bortolotti (University of Birmingham, UK) and Dr Martha Turner (University College London, UK), with Emeritus Professor Max Coltheart, Dr Rochelle Cox and Associate Professor Robyn Langdon, on hypnotic analyses of clinical delusions.

Professor Peter Halligan and Dr David Oakley (University of Cardiff, UK) on instrumental uses of hypnosis, including hypnotic analogues of neuropsychological and neuropsychiatric conditions.

Professor Erik Woody (University of Waterloo, Canada) on conceptualising and measuring individual differences in hypnotic ability.

**Dr Jon Brock**
Dr Lisa Archibald (University of Western Ontario, Canada) and the speech pathology team at Royal Far West Children's Hospital, on comparing phonological memory skills in children with autism and specific language impairment.

Professor Valsa Eapen (University of New South Wales and the Liverpool Autism Specific Early Learning and Care Centre), to develop ways of testing pre-schoolers with autism using MEG.

Professor Rhoshel Lenroot (University of New South Wales), on a study of brain oscillations and neurotransmitters in adolescents with autism.

Professor Kate Nation (University of Oxford, UK), using eye-tracking to investigate language comprehension in children with autism.

**Emeritus Professor Brian Byrne**
Dr Erik Willcutt and Dr Richard Olson (University of Colorado at Boulder, USA) and Dr Stefan Samuelsson (Linkoping University, Sweden), on studies of genetic and environmental influences on mathematics, literacy and attention in elementary and high-school twins.

**Professor Anne Castles**
Professor Denis Burnham (University of Western Sydney), on language specific speech perception and its relationship with reading development.

Professor Naama Friedmann (Tel Aviv University, Israel), on their jointly-authored book on subtypes of developmental dyslexia.

Professor Kate Nation (University of Oxford, UK), on their joint ARC Discovery Project on orthographic learning processes in children.

Professor Sheena Reilly, Professor Margot Prior, Associate Professor Melissa Wake, Professor John Carlin and Dr Lesley Bretherton (University of Melbourne and the Murdoch Children's Research Institute), on an NHMRC project, the Early Language in Victoria (ELVS) study.

**Emeritus Professor Max Coltheart**
Professor Richard Bryant (University of New South Wales), with Associate Professor Amanda Barnier and Associate Professor Robyn Langdon, on hypnotic modelling of mirror delusions.

Dr Ryan McKay (Royal Holloway, University of London, UK) with Associate Professor Robyn Langdon on motivational factors in delusion.

Dr Claudio Mulatti (University of Trento, Italy), computational modelling of reading in Italian and English.

Professor Kathy Rastle (Royal Holloway, University of London, UK), Professor Taeko Wydell (Brunel University, UK), Dr Jelena Havelka (University of Leeds, UK) and Professor Derek Besner (University of Waterloo, Canada), on computational modelling.

**Distinguished Professor Stephen Crain**
Dr Cathy Foley and Dr Marcel Bick (CSIRO), on developing a liquid helium recovery system for the MEG brain imaging systems to be located at the Australian Hearing Hub.

Professor Liqun Gao (Beijing Language and Culture University, China), with Associate Professor Rosalind Thornton on the acquisition of logical words in Mandarin Chinese and in English.

Dr Takuya Goro (Ibaraki University, Japan), on the acquisition of logical words in Japanese and in English.

Professor Gen Uehara (Kanazawa Institute of Technology, Japan), with Associate Professor Blake Johnson and Dr Catherine McMahon on developing the world's first MEG brain imaging system for measuring brain responses in people with cochlear implants.

HEARing CRC, Sydney Cochlear Implant Centre, National Acoustic Laboratories, Cochlear Ltd, with Associate Professor Blake Johnson on the cortical evaluation of implant performance.

**Professor Katherine Demuth**
Dr Teresa Ching (National Acoustics Laboratories), on the phonetics/phonology of the speech of children with hearing loss.

Dr Jan Edwards (University of Wisconsin, USA), on children's phonological development, including non-standard dialects.

Dr Michael Frank (Stanford University, USA), on looking at modeling word learning as a function of social interactions.

Dr Mark Harvey (University of Newcastle), on the articulatory phonology of coronal consonants in English and Arandic languges.

Dr Sally Hewat (University of Newcastle), on stuttering and phonological disorders.

Dr Barbara Höhle (Potsdam University, Germany), on phonological, morphological and syntactic development in typically-developing children and those with hearing loss/language delay. Eye-tracking methods.

Dr Caroline Jones (University of Wollongong), on Indigenous child speech.

Dr Lettitia Naigles (University of Connecticut, USA), on the language system of children with autism; infant looking methods, eyetracking.

Dr Susan Purdy (University of Auckland, New Zealand), on the speech of children with hearing loss.

Dr Stefanie Shattuck-Hufnagel (Massachusetts Institute of Technology, USA), on the acoustics and articulation of prosodic and phonological systems in children and adults.

Dr Jae Yung Song (University of Wisconsin, USA), on the acoustics and articulatory organisation of adult and child speech.

Dr Megha Sundara (University of California, USA), on infant speech perception and grammatical morphology across typical, bilingual, SLI and hearing loss populations.

Dr Rachel Theodore (University of Connecticut, USA), on phonological and morphological development, and effects of phonotactic probability.

Dr Myfany Turpin (University of Queensland), on Arandic languages.

**Professor Peter Halligan**
Professor Gereon Fink (University Hospital Cologne, Germany), on clinical analogue studies of visual neglect.

**Professor John Hodges**
Dr Thomas Bak (University of Edinburgh, UK), on cognition in motor neurone disease.

Associate Professor Kirrie Ballard (University of Sydney), on language studies in dementia.

Dr Maria Luisa Gorno-Tempini (University of California, USA), on progressive aphasia.

Professor Matthew Kiernan (University of New South Wales), on cognition in motor neurone disease.

Professor Jillian Kril (University of Sydney) and Professor Glenda Halliday (University of New South Wales), with Dr Olivier Piguet on pathology and anatomy of memory.

Dr Facundo Manes (Instituto de Neurología Cognitiva, Argentina), on collaborative studies of cognition in FTD.

Professor Bruce Miller (University of California, USA), on progressive aphasia.

Dr Peter Nestor (University of Cambridge, UK), on semantic dementia.

Professor Karalyn Patterson (University of Cambridge, UK), on semantic memory.

Dr Katya Rascovsky and Associate Professor Murray Grossman (University of Pennsylvania, USA), on frontotemporal dementia.

Professor Chris Rowe (University of Melbourne), with Dr Olivier Piguet on Positron Emission Tomography imaging in the dementias.

Dr James Rowe (Cambridge University, UK), on cognition and memory in Progressive Supranuclear Palsy.

Dr Victor Villemagne (University of Melbourne), with Dr Oliver Piguet on Positron Emission Tomography imaging in the dementias.

Professor Adam Zeman (Exeter University, UK), on forgetting and memory in epilepsy.

**Associate Professor Blake Johnson**
Dr Michael Hautus (University of Auckland, New Zealand) on brain mechanisms of auditory scene analysis.

Professor Andrew Heathcote and Dr Scott Brown (University of Newcastle), on acquisition of expertise in spatial imagery.

Associate Professor Drew Khlentzos (University of New England), Professor Ovid Tzeng (Academica Sinica, Taiwan), Professor Thomas Lee and Professor Liqun Gao (Beijing Language and Culture University, China), with Distinguished Professor Stephen Crain and Associate Professor Rosalind Thornton on "the emergence of logic in child language".

Professor Rhoshel Lenroot (University of New South Wales), on the relationship between gamma-aminobutyric acid (GABA) levels and neural oscillations in autism.

Dr Penelope McNulty and Professor Caroline Rae (University of New South Wales), on imaging brain recovery after stroke.

**Associate Professor Robyn Langdon**
Professor Martin Brüne (University of Bochum, Germany), on the relationship between poor social cognition and social behavioural problems in schizophrenia.

Dr Philip Corlett (Yale University, USA), on a rapprochement between Corlett's 'prediction-error' model of psychotic delusions and the two-deficit model of monothematic delusions.

Dr Adam Guastella (University of Sydney) and Associate Professor Philip Ward (University of New South Wales), to examine the effect of nasal administration of Oxytocin (a neuropeptide) on social cognitive abilities in people with schizophrenia.

Dr Ryan McKay (Royal Holloway University of London, UK), with Emeritus Professor Max Coltheart to extend the original two-deficit model of bizarre delusions to incorporate motivational factors into a more generic two-factor explanatory framework.

Associate Professor Ulrich Schall (University of Newcastle), to identify predictors of transition to psychotic illness in at-risk young people.

Associate Professor Brian Scholl and Dr Tao Gao (Yale University, USA), on piloting paradigms to investigate the detection of signals of agency and intent in people with schizophrenia.

Dr Martha Turner (University College London, UK), and Dr Tim Bayne (Oxford University, UK), on the relations between delusion and confabulation in amnesic brain-injured patients.

**Associate Professor Genevieve McArthur**
Dr Florian Hutzler and Stefan Howelka (Salzburg University, Austria) with Peter de Lissa on a project using fixation-related potentials (FRPs) to compare sentence processing in Austrian and Australian readers.



Dr Romina Palermo (Australian National University), Dr Florian Hutzler and Stefan Howelka (Salzburg University, Austria) with Peter de Lissa on a project using fixation-related potentials to investigate the brain responses to eyes in faces.

Professor Maggie Snowling and Professor Charles Hulme (University of York, UK), on auditory processing in children with spoken language and reading impairments.

**Dr Ryan McKay**
Professor Peter Brugger (Zurich University Hospital, Switzerland), on unrealistic optimism and caloric vestibular stimulation.

Professor Daniel Dennett (Tufts University, USA), on evolution and religion.

Professor Ernst Fehr and Dr Charles Efferson (University of Zurich, Switzerland), on religion and prosocial behaviour; shared delusions.

Dr Petter Johansson (University College London, UK), on religion and choice blindness.

Professor Ara Norenzayan, Professor Joe Henrich, Dr Jon Lanman and Dr Miriam Mathews (University of British Columbia, Canada), on ritual and group cohesion.

Professor Bill Swann (University of Texas, USA), on identity fusion and ritual.

Professor Harvey Whitehouse (University of Oxford, UK), on religion and morality; ritual and group cohesion.

**Professor Kate Nation**
Professor Kim Plunkett (University of Oxford, UK), on predicting reading outcomes in school-age children from measures of vocabulary in infancy.

**Professor Lyndsey Nickels**
Dr Wendy Best (University College London, UK) and Professor David Howard (Newcastle University, UK), are reviewing common methodological failings in single case study treatment research, and writing a paper on this issue.

Associate Professor David Copland, Dr Tony Angwin, Dr Katie McMahon, Shiree Heath and Dr Anna Holmes (University of Queensland), on using fMRI to evaluate different treatments for word retrieval impairments following brain damage.

Dr Karen Croot (University of Sydney) and Cathleen Taylor (War Memorial Hospital), on intervention for individuals for progressive language disorders.

Dr Kati Renvall and Dr Britta Biedermann collaborate with a large network of researchers nationally and internationally through the NHMRC Centre for Clinical Research Excellence in Aphasia Rehabilitation.

**Dr Liz Pellicano**
Dr Geoff Bird (Birkbeck College, UK), on susceptibility to social influence in autism.

Professor David Burr (Universitá di Firenze, Italy), on number perception in autism, perceptual adaptation, motion processing and Bayesian decision theory.

Dr Andy Calder (MRC Cognition and Brain Sciences Unit, Cambridge, UK), on eye-gaze perception in autism.

Professor Tony Charman (Institute of Education, University of London, UK), re-mapping autism research.

Dr Chiara Fiorentini (Australian National University), on face processing in autism.

Professor Nancy Kanwisher, Dr Kami Koldewyn and Dr Yuhong Jiang (Massachusetts Institute of Technology, USA), on attention and executive function in autism.

Dr Kristine Krug (University of Oxford, UK), on social conformity in monkeys, typical children and children with autism.

Dr Will Mandy (University College London, UK), on autism awareness training in mainstream schools.

Dr Andreas Mojzisch (Georg-August-University Göttingen, Germany), on social conformity in monkeys, typical children and children with autism.

Mr Ari Ne'eman (Autistic Self Advocacy Network, USA), on ethical and social implications of autism research.

Professor Gill Rhodes (University of Western Australia), on face processing in autism.

Dr James Russell (University of Cambridge, UK), on self-visibility in autism.

Professor Marc Stears (University of Oxford and the Institute for Public Policy Research, UK), on ethical and social implications of autism research.

**Dr Olivier Piguet**
Associate Professor Kay Double (University of New South Wales), on cognition in Parkinson's disease.

Dr Michael Hornberger (University of New South Wales), on neuroimaging studies of memory and cognition in the dementias.

Professor Skye McDonald (University of New South Wales), on emotion processing.

Professor Alan Pegna (Geneva University Hospital, Switzerland), on emotion processing.

Associate Professor Åsa Petersén (Lund University, Sweden), on eating behaviour in the dementias.

Associate Professor Katherine Samaras (Garvan Institute of Medical Research), on eating behaviour in frontotemporal dementia.

**Professor Gillian Rhodes**
Dr Chris Benton (Bristol University, UK), on norm-based coding of facial expression in children.

Professor David Burr (University of Florence, Italy), on perceptual processing in autism spectrum disorder.

Dr Andy Calder (MRC Cognition and Brain Sciences Unit, Cambridge, UK), on integrating facial cues and perception of eye gaze.

Dr Louise Ewing (University of Western Australia), on face processing in children with autism.

Dr Chiara Fiorentini (Australian National University), on face perception in the broader autism phenotype.

Professor William Hayward (University of Hong Kong, Hong Kong), on how does race affect face processing?

Dr Linda Jeffery (University of Western Australia), on development of face processing mechanisms.

Dr Nadine Kloth (University of Western Australia), on attentional biases in face perception.

Professor Daphne Maurer (McMaster University, Canada), on face processing in adults with autism spectrum disorder, and the effect of early visual deprivation on the later development of face processing.

Dr Cathy Mondloch (Brock University, Canada), on attentional biases in face perception.

Professor Elinor McKone (Australian National University), on development of face perception mechanisms.

Dr Romina Palermo (Australian National University), on face processing in developmental prosopagnosia.

Dr Liz Pellicano (Institute of Education, University of London, UK), on face processing in autism spectrum disorder and broader phenotype.

Professor Leigh Simmons (University of Western Australia), on evolutionary mechanisms of person perception.

Dr Jeremy Wilmer (Wellesley College, USA), on heritability of face preferences: a twin study.

**Associate Professor Greg Savage**
Professor David Ames (University of Melbourne) and the Australian Imaging, Biomarkers and Lifestyle Study of Ageing Research Group, Melbourne and Perth, on understanding the development of Alzheimer's disease.

Dr Chris Baker (National Institute of Mental Health, USA), on neuroimaging of brain plasticity.

Professor Paul Fitzgerald, Dr Kate Hoy and Dr Jerome Maller (Monash Alfred Psychiatry Research Centre) on neurocognition in treatment-resistant depression.

Professor Paul Fitzgerald and Professor Susan Rossell (Monash Alfred Psychiatry Research Centre), on understanding auditory-verbal hallucinations in schizophrenia, and neurocognition in treatment-resistant depression.

Professor Michael Morgan (Macquarie University), on neuroimaging of brain plasticity.

Associate Professor Sharon Naismith (Brain and Mind Research Institute), on emotion recognition in Mild Cognitive Impairment.

Professor Dominic Rowe (Macquarie University), on memory functioning in Parkinson's disease and prediction of dementia in motor neurone disease.

Associate Professor Peter Schofield (University of Newcastle), on olfaction and the early detection of Alzheimer's disease.

Dr Carolyn Wilshire (Victoria University, New Zealand), on language difficulties in Alzheimer's disease.

Professor Stephen Wood (University of Birmingham, UK), on memory and endocrine functioning in first-episode psychosis.

**Associate Professor Rosalind Thornton**
Professor Maria-Teresa Guasti (University of Milano-Bicocca, Italy), on syntax acquisition in typically-developing children and children with Specific Language Impairment.

Dr Hirohisa Kiguchi (Miyagi Gakuin Women's College, Japan), on ellipsis in English and Japanese.



# VISITORS

## Academic Visitors

**Associate Professor Drew Khlentzos**
Philosophy School of Social Science, University of New England
17 -21 January 2011, Macquarie University

**Dr Donna Rose Addis**
Department of Psychology, University of Auckland, New Zealand
26 January - 11 February 2011, University of New South Wales

**Professor Georgina Rippon**
School of Life & Health Sciences, Aston University, UK
27 January - 19 February 2011, Macquarie University

**Dr Barbara Treccani**
Department of Cognitive Sciences and Education, University of Trento, Italy
27 January - 5 March 2011, Macquarie University

**Dr Claudio Mulatti**
Department of Developmental Psychology, University of Padova, Italy
27 January - 5 March 2011, Macquarie University

**Professor Ovid Tzeng**
Institute of Neuroscience, National Yang-Ming University, Taiwan
3 February 2011, Macquarie University

**Professor Alison Gopnik**
Department of Psychology, University of California Berkeley, USA
17 February 2011, Macquarie University

**Professor Yoshio Minabe**
Department of Psychiatry and Neurobiology, Kanazawa University, Japan
21 - 22 February 2011, Macquarie University

**Associate Professor Mitsuru Kikuchi**
Department of Psychiatry and Neurobiology , Kanazawa University, Japan
21 - 22 February 2011, Macquarie University

**Sanae Ueno**
Department of Psychiatry and Neurobiology, Kanazawa University, Japan
21 - 22 February 2011, Macquarie University

**Professor Simon Garrod**
Department of Psychology, Glasgow University, UK
22 February 2011, University of Western Australia

**Dr Leslie Zebrowitz**
Department of Psychology, Brandeis University, USA
26 February - 5 March 2011, University of Western Australia

**Dr Yumiko Otsuka**
School of Psychology, University of New South Wales
28 February - 6 March 2011, University of Western Australia

**Professor Douglas Saddy**
School of Psychology and Clinical Language Sciences, University of Reading, UK
21 - 22 March 2011, Macquarie University

**Dr Anna Mitchell**
Psychology Department, University of Oxford, UK
29 March 2011, University of New South Wales

**Dr Antje Lorenz**
Department of Linguistics, University of Potsdam, Germany
1 April - 31 May 2011, Macquarie University

**Distinguished Professor Stephen Crain**
Department of Linguistics, Macquarie University
5 - 6 April 2011, University of Western Australia

**Dr Andrew Calder**

MRC Cognition and Brain Sciences Unit, Cambridge, UK
6 - 10 April 2011, University of Western Australia

**Professor David Howard**
School of Education, Communication and Language Sciences, University of Newcastle, UK
11 - 22 April 2011, Macquarie University

**Dr Ysbrand van der Werf**
Department Anatomy & Neurosciences, VU University, The Netherlands
5 May 2011, University of New South Wales

**Professor Lu**
Beijing Language and Culture University, China
7 - 9 May 2011, Macquarie University

**Professor Liqun Gao**
Center for Studies of Chinese as a Second Language, Beijing Language and Culture University, China
7 - 9 May 2011, Macquarie University

**Dr Peter Nestor**
Department of Clinical Neurosciences, University of Cambridge, UK
10 May 2011, University of New South Wales

**Professor Ken Forster**
Department of Psychology, University of Arizona, USA
30 May - 1 July 2011, Macquarie University

**Professor Peter Carruthers**
Department of Philosophy, University of Maryland, USA
17 - 20 June 2011, Macquarie University

**Dr John Antonakis**
Department of Organisational Behavior, University of Lausanne, Switzerland
23 June 2011, University of Western Australia

**Professor Maria Teresa Guasti**
Department of Psychology, University of Milano-Bicocca, Italy
1 July - 28 August 2011, Macquarie University

**Professor Martin Brüne**
Department of Psychiatry, University of Bochum, Germany
15 July - 15 August 2011, Macquarie University

**Professor Naama Friedmann**
School of Education, Tel Aviv University, Israel
18 July - 28 August 2011, Macquarie University

**Dr Ashok Jansari**
School of Psychology, University of East London, UK
18 July 2011, University of New South Wales

**Dr Laura Shapiro**
School of Life and Health Sciences, Aston University, UK
10 - 31 August 2011, Macquarie University

**Dr Ian Apperly**
School of Psychology, University of Birmingham, UK
10 - 31 August 2011, Macquarie University

**Dr Ivano Caponigro**
Department of Linguistics, University of California San Diego, USA
17 August - 26 August 2011, Macquarie University

**Dr Ryan McKay**
Department of Psychology, Royal Holloway, University of London, UK
22 - 26 August 2011, Macquarie University

**Dr Martha Turner**
Department Psychology, University College London, UK
22 - 26 August 2011, Macquarie University

**Dr Holger Wiese**
Department of General Psychology and Cognitive Neuroscience, Friedrich Schiller University of Jena, Germany
29 August - 7 October 2011, University of Western Australia

**Dr Jon Brock**
Department of Cognitive Science, Macquarie University
8 - 10 September 2011, University of Western Australia

**Professor William Hayward**
Department of Psychology, University of Hong Kong, Hong Kong
12 - 16 September 2011, University of Western Australia

**Dr Kate Crookes**
Department of Psychology, Hong Kong University, Hong Kong
12 - 16 September 2011, University of Western Australia

**Dr Paul Dux**
School of Psychology, University of Queensland
16 September 2011, University of Western Australia

**Dr Donna Rose Addis**
Department of Psychology, University of Auckland, New Zealand
29 - 30 September 2011, University of New South Wales

**Dr Amee Baird**
School of Psychology, University of Newcastle
30 September 2011, University of New South Wales

**Emeritus Professor Noam Chomsky**
Department of Linguistics and Philosophy, Massachusetts Institute of Technology, USA
1 November 2011, Macquarie University

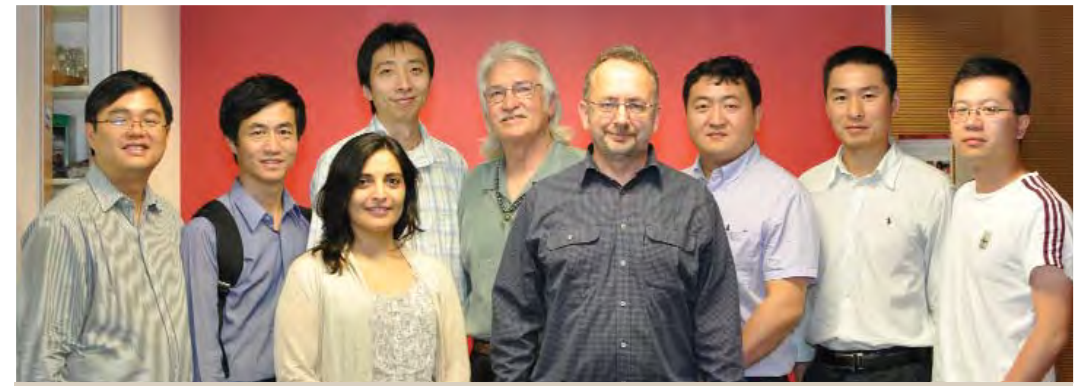
**Dr Hannah Nash**
Department of Psychology, University of York, UK
1 - 18 November 2011, Macquarie University

**Associate Professor Hélène Deacon**
Psychology Department. Dalhousie University, Canada
5 - 24 November 2011, Macquarie University

**Dr Ronghui Su**
Bureau of Biology, Chinese Academy of Sciences, China
**Dr Yi Shen**
Bureau of Biology, Chinese Academy of Sciences, China
**Professor Hao Lei**
Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, China
**Professor Yan Zhuo**
Institute of Biophysics, Chinese Academy of Sciences, China
**Associate Professor Bo Wang**
Institute of Biophysics, Chinese Academy of Sciences, China
15 November 2011, Macquarie University

**Dr Louise Mercer**
Faculty of Education, Learning and Professional Studies Discipline, Queensland University of Technology
21 - 26 November 2011, Macquarie University





*Visiting delegates from the Chinese Academy of Sciences, China*

**Emeritus Professor Brian Byrne**
School of Behavioural, Cognitive and Social Sciences, University of New England
21 - 25 November 2011, Macquarie University

**Professor William Hayward**
Department of Psychology, University of Hong Kong, Hong Kong
21 - 25 November 2011, Macquarie University

**Professor Gillian Rhodes**
School of Psychology, University of Western Australia
22 - 25 November 2011, Macquarie University

**Dr Donna Rose Addis**
Department of Psychology, University of Auckland, New Zealand
22 - 26 November 2011, Macquarie University and University of New South Wales

**Dr Thomas Bak**
School of Philosophy, Psychology and Language Sciences, University of Edinburgh, UK
2 December 2011, University of New South Wales

**Professor Joel Talcott**
School of Life & Health Sciences, Aston University, UK
7 - 14 December 2011, Macquarie University

**Dr Caroline Witton**
School of Life and Health Sciences, Aston University, UK
7 - 14 December 2011, Macquarie University

**Professor Stanislas Dehaene**
Department of Experimental Cognitive Psychology, Collège de France, France
9 - 16 December 2011, Macquarie University

**Dr Donna Rose Addis**
Department of Psychology, University of Auckland, New Zealand
9 - 13 December 2011, Macquarie University and University of New South Wales

## Student Visitors

**Yuko Yoshimura**
Department of Psychiatry and Neurobiology, Kanazawa University, Japan
3 January - 28 February 2011, Macquarie University

**Laurie Ann Sapey-Triomphe**
Neuroscience Department, École Normale Supérieure, France
21 February 2011, University of New South Wales

**Ami Sambai**
Graduate School Comprehensive Human Sciences, University of Tsukuba, Japan
28 February - 11 March, 24 May - 9 September 2011, Macquarie University

**Doreen Jakob**
University of Osnabrück, Germany
1 April - 1 December 2011, Macquarie University

**Anne Jäger**
University of Bremen, Germany
April 1st - September 30th 2011

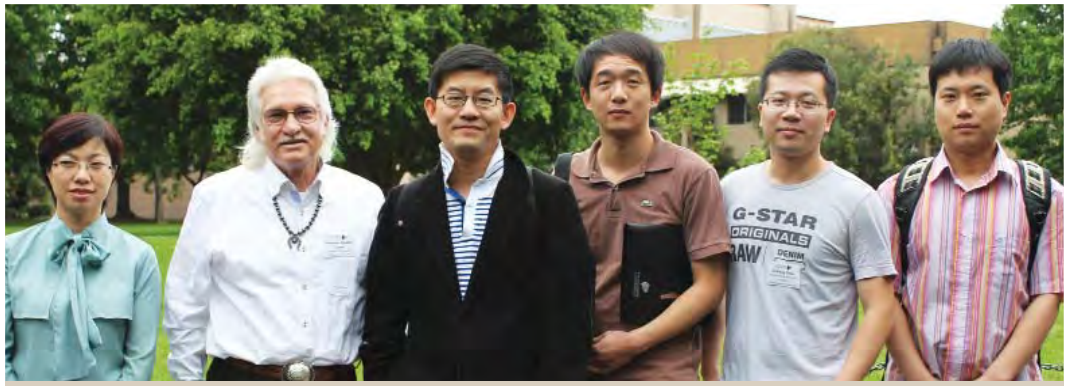
**Kimberley Billera**
Binghampton University, USA
13 May - 11 August 2011, Macquarie University

**Ronnie Horup**
Aalborg University, Denmark
1 August - 1 December 2011, Macquarie University

**Ema Erkocevic**
Aalborg University, Denmark
1 August - 1 December 2011, Macquarie University

**Mette Bøg**
Aalborg University, Denmark
1 August - 1 December 2011, Macquarie University

**Lisa Borkenhagen**
University of Potsdam, Germany
8 August - 16 September 2011, Macquarie University



*Visiting media delegation from China, from left to right:*
*Ms Ning Yang, Professor Stephen Crain, Mr Xianmin Gao, Mr Yongxiao Liu, Dr Peng Zhou and Mr Xinyi Zhang*

**Terje Lohndal**
Department of Linguistics, University of Maryland, USA
15 August - 29 August 2011, Macquarie University

**Ole Lund**
Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark, Denmark
19 September - 20 December 2011, Macquarie University

## Other Visitors

**Xi Wang**
Beijing Language and Culture University, China
7 - 9 May 2011, Macquarie University

**Ning Yang, Xianmin Gao**
China Central Television (CCTV), China
**Xinyi Zhang**
People's Daily Online, China
**Yongxiao Liu**
Health Times, China
16 – 21 November 2011, Macquarie University

# SEMINARS

*The statistical social learner: Using causal inference to learn about other people*
**Professor Alison Gopnik**
Department of Psychology, University of California, Berkeley, USA
15 February 2011, Macquarie University

*Neural interactions between conscious and unconscious vision: Affective and crossmodal blindsight*
**Professor Elisabetta Ladavas**
Centre for Studies and Researches in Cognitive Neuroscience, University of Bologna, Italy
22 February 2011, Macquarie University

*The new science of social interaction*
**Professor Simon Garrod**
School of Psychology, University of Glasgow, UK
22 February 2011, University of Western Australia

*Unconscious vision: A review of masked priming studies*
**Professor Ulrich Ansorge**
Faculty of Psychology, University of Vienna, Austria
1 March 2011, Macquarie University

*View-invariant representation of face in infants' brain: Neural adaptation study as measured by NIRS*
**Dr Megumi Kobayashi**
Department of Psychology, Chuo University, China
2 March 2011, University of Western Australia

*Perception of Mooney faces in young infants*
**Yumiko Otsuka**
Department of Psychology, Chuo University, China
2 March 2011, University of Western Australia

*Professor Maria Teresa Guasti*
*(University of Milano-Bicocca, Italy)*

*Contributions of facial appearance to first impressions and group stereotypes*
**Professor Leslie Zebrowitz**
Psychology Faculty, Brandeis University, USA
3 March 2011, University of Western Australia

*What makes a champion? Tracing and facilitating the development of expert performers*
**Professor A. Mark Williams**
Discipline of Exercise and Sport Science, University of Sydney
22 March 2011, Macquarie University

*How motivation and emotion shape perception*
**Dr Steve Most**
Department of Psychology, University of Delaware, USA
25 March 2011, Macquarie University

*Spelling and spelling development*
**Professor Rebecca Treiman**
Department of Psychology, Washington University, USA
29 March 2011, Macquarie University

*Stay connected*
**Distinguished Professor Stephen Crain**
Department of Linguistics, Macquarie University
6 April 2011, University of Western Australia

*Let's do the MamBod! - Mamillary body degeneration in frontotemporal dementia*
**Dr Michael Hornberger**
Neuroscience Research Australia, University of New South Wales
8 April 2011, University of New South Wales

*Investigating mnemonic functions of the Medial Thalamus in animals and humans*
**Dr Anna Mitchell**
Psychology Department, Oxford University, UK
8 April 2011, University of New South Wales

*Intact and impaired word retrieval: Cognitive and neural explanations*
**Dr Stefanie Abel**
Sections Neuropsychology & Clinical Research of Cognition, University Hospital RWTH, Germany
3 May 2011, Macquarie University

*Assessing the capacity and architecture of information processing*
**Dr Ami Eidels**
School of Psychology, University of Newcastle
10 May 2011, Macquarie University

*Semantic dementia: Insights from modern neuroimaging*
**Dr Peter Nestor**
Department of Clinical Neurosciencs, Cambridge University, UK
10 May 2011, Neuroscience Research Australia, University of New South Wales

*Face processing impairments in autism spectrum conditions cannot be explained by atypical reward value of faces*
**Louise Ewing**
School of Psychology, University of Western Australia
12 May 2011, University of Western Australia

*Bayes factors for evaluating statistical evidence in data from common statistical designs*
**Assistant Professor Richard Morey**
Department of Psychometrics and Statistics, University of Groningen, The Netherlands
17 May 2011, Macquarie University

*Children's face aftereffects transfer across changes in viewpoint*
**Dr Linda Jeffery**
School of Psychology, University of Western Australia
19 May 2011, University of Western Australia

*Have you got the look? Facial attractiveness and gaze perception*
**Dr Nadine Kloth**
School of Psychology, University of Western Australia
26 May 2011, University of Western Australia

*The architecture of attentional tracking*
**Assistant Professor Todd Horowitz**
Division of Sleep Medicine, Harvard Medical School, USA
14 June 2011, Macquarie University

*Lexical co-occurrence and ambiguity resolution*
**Professor Ken Forster**
Department of Psychology, University of Arizona, USA
14 June 2011, Macquarie University

*Neural mechanisms for updating attention and action: Evidence from human brain stimulation*
**Dr Chris Chambers**
School of Psychology, Cardiff University, UK
28 June 2011, Macquarie University

*Do psychopaths make moral judgments?*
**Professor Walter Sinnott-Armstrong**
Department of Philosophy, Duke University, USA
26 July 2011, Macquarie University

*The functional effects of mental imagery in learning and memory*
**Dr Joel Pearson**
School of Psychology, University of New South Wales
2 August 2011, Macquarie University

*How do we learn to read words? A meta-analysis, an artificial orthography paradigm and some fMRI*
**Dr Joanne Taylor**
MRC Cognition and Brain Sciences Unit, Cambridge University, UK
23 August 2011, Macquarie University

*Eye-tracking studies of language comprehension in autism*
**Dr Jon Brock**
Department of Cognitive Science, Macquarie University
12 September 2011, University of Western Australia

*Professor Naama Friedmann (Tel Aviv University, Israel)*

*Left to right: Associate Professor Rosalind Thornton, Dr Ivan Yuen, Professor Katherine Demuth, Professor Maria Teresa Guasti (University of Milan-Bicocca), Ryan Carpenter (Cochlear) and Dr Nan Xu*

*The role of race and age for recognition memory of unfamiliar faces*
**Dr Holger Wiese**
Department of General Psychology and Cognitive Neuroscience, Friedrice Schiller University of Jena, Germany
15 September 2011, University of Western Australia

*Holistic and configural face processing in Chinese participants*
**Dr Kate Crookes**
Department of Psychology, University of Hong Kong, Hong Kong
15 September 2011, University of Western Australia

*Is the other-race effect due to perception or memory?*
**Professor William Hayward**
Department of Psychology, University of Hong Kong, Hong Kong
15 September 2011, University of Western Australia

*A cognitive model of the sense of embodiment in a (rubber) hand*
**Dr Glenn Carruthers**
Berlin School of Mind and Brain, Humbolt University, Germany
25 October 2011, Macquarie University

*Letter-pattern learning: Monolingual and bilingual children's development of reading skill*
**Dr Hélène Deacon**
Department of Psychology, Dalhousie University, Canada
8 November 2011, Macquarie University

*Transient attention and perceptual tradeoffs*
**Dr Yaffa Yeshurun**
Department of Psychology, University of Haifa, Israel
15 November 2011, Macquarie University

*How meaningful are the cognitive complaints of older people and their informants in detecting and predicting cognitive decline?*
**Dr Melissa Slavin**
School of Psychiatry, University of New South Wales
22 November 2011, Macquarie University

## Centre for Language Sciences (CLaS)-CCD Research Colloquium Series

*Clitics and non-words in early L2 acquisition and in cochlear implanted children*
**Professor Maria Teresa Guasti**
Department of Psychology, University of Milan-Bicocca, Italy
4 August 2011, Macquarie University

*Syntax in syntactic-SLI and other types of SLI*
**Professor Naama Friedmann**
School of Education, Tel Aviv University, Israel
16 August 2011, Macquarie University

*Questioning in time and space*
**Professor Maria Teresa Guasti**
Department of Psychology, University of Milan-Bicocca, Italy
18 August 2011, Macquarie University

*What does 'what' mean? An answer from free relatives cross-linguistically?*
**Assistant Professor Ivano Caponigro**
University of California, San Diego, USA
19 August 2011

# PUBLICATIONS

## Belief Formation Program

### Books

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# Memory Program

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# Person Perception Program

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## Proceedings

Kohnen, S. (2011). Vernachlaessigte Dyslexien: Visuell-orthographische Verarbeitung bei Lesestoerungen. In S. Hanne., T. Fritzsche., S. Ott., & A. Adelt. (Ed.), Spektrum Patholinguistik Band 4: Schwerpunktthema: Lesen lernen: *Diagnostik und Therapie bei Stoerungen des Leseerwerbs* (pp. 75-81). Potsdam, Universitaetsverlag Potsdam.

# Other

## Book chapters

Johnson, B.W. (In Press). Processing of Binaural Information in Human Auditory Cortex. In P. Strumillo (Ed.), *Advances in Sound Localization* (pp. 407-430). Croatia: InTech.

Thompson, W.F., & Quinto, L. (2011). Music and emotion: Psychological considerations. In P. Goldie, & E. Schellekens (Eds.), *The Aesthetic Mind: Philosophy and Psychology* (pp. 357-375). Oxford: Oxford University Press.

## Journal articles

Ammirante, P., & Thompson, W.F. (In Press). Continuation tapping to triggered melodies: Motor resonance effects of melodic motion. *Experimental Brain Research.*

Ammirante, P., & Thompson, W.F. (2011). Melodic accent as an emergent property of tonal motion. Empirical *Musicology Review, 5,* 94-107.

Ammirante, P., Thompson, W. F., & Russo, F. A. (2011). Ideomotor effects of pitch on continuation tapping. *Quarterly Journal of Experimental Psychology, 64*, 381-393.

Badcock, N.A., Holt, G., Holden, A., & Bishop, D.V.M. (In Press). dopOSCCI: a functional transcranial Doppler ultrasonography summary suite for Matlab. *Journal of Neuroscience Methods.*

Brock, J. (2011). Complementary approaches to the developmental cognitive neuroscience of autism – reflections on Pelphrey et al. (2011). *Journal of Child Psychology and Psychiatry, 52*, 645-646.

Brock, J., Xu, J. Y., & Brooks, K. (2011). Individual differences in visual search: relationship to autistic traits, discrimination thresholds, and speed of processing. *Perception, 40*, 739-742.

Connors, M.H., Burns, B.D., & Campitelli, G. (2011). Expertise in complex decision making: The role of search in chess 70 years after de Groot. *Cognitive Science, 35*, 1567-1579. doi:10.1111/j.1551-6709.2011.01196.x

Eisenberg, J., & Thompson, W.F. (In Press). The effects of competition on improvisers' motivation, stress, and creative performance. *Creativity Research Journal.*

Etchell, A., Sowman, P.F., & Johnson, B.W. (In Press). "Shut up!" An electrophysiological study investigating the neural correlates of vocal inhibition. *Neuropsychologia.*

Harrison, J., & McKay, R. (In Press). Delay discounting rates are temporally stable in a matching procedure using theoretical and 'Area under the Curve' analyses. *The Psychological Record.*

Mahajan, Y., & McArthur, G. (2011). The effect of a movie soundtrack on auditory event-related potentials in children, adolescents and adults. *Clinical Neurophysiology, 122*(5), 934-941. doi:10.1016/j.clinph.2010.08.014

Porter, M.A., & Dodd, H.F. (2011). A longitudinal study of cognitive abilities in Williams syndrome. Developmental *Neuropsychology, 36*(2), 255-272. doi:10.1080/87565641.2010.549872

Quinto, L., Thompson, W.F., Russo, F.A., & Trehub, S.E. (2011). A comparison of the McGurk effect for spoken and sung syllables. *Attention, Perception & Psychophysics, 72*, 1450-1454.

Sutton, J., McIlwain, D., Christensen, W., & Geeves, A. (2011). Applying intelligence to the reflexes: embodied skills and habits between Dreyfus and Descartes. *Journal of the British Society for Phenomenology, 42*(1), 78-103.

Tribble, E., & Sutton, J. (2011). Cognitive ecology as a framework for Shakespearean studies. *Shakespeare Studies, 39,* 94-103.

Vuoskoski, J., Thompson, W.F., McIlwain, D., & Eerola, T. (In Press). Who enjoys listening to sad music and why? *Music Perception.*

# Perception in Action

## Book chapters

Bullot, N. (2011). Attention, information and epistemic perception. In G. Terzis, & R. Arp (Eds.), *Information and Living Systems: Essays in Philosophy of Biology* (pp. 309-352). Cambridge, MA, USA: MIT Press.

Bullot, N.J. (In Press). History, traces and the cognitive neuroscience of art: Specifying the principles of a psycho-historical theory of art. In C. Wolfe (Ed.), *Brain Theory UK:* Palgrave Macmillan, New Directions in Philosophy.

## Journal articles

Al-Janabi, S., & Finkbeiner, M. (In Press). Effective processing of masked eye gaze requires volitional control. *Experimental Brain Research.* doi: 10.1007/s00221-011-2944-0

Awasthi, B., Friedman, J., & Williams, M. (2011). Faster, stronger, lateralized: Low spatial frequency information supports face processing. *Neuropsychologia, 49*(13), 3583-3590. doi:10.1016/j.neuropsychologia.2011.08.027

Awasthi, B., Friedman, J., & Williams, M.A. (2011). Processing of low spatial frequency faces at periphery in choice reaching tasks. *Neuropsychologia, 49*(7), 2136-2141. doi:10.1016/j.neuropsychologia.2011.03.003

Finkbeiner, M. (2011). Subliminal priming with nearly perfect performance in the prime-classification task. *Attention, Perception & Psychophysics, 73*(4), 1255–1265. doi:10.3758/s13414-011-0088-8

Finkbeiner, M., & Friedman, J. (2011). The flexibility of nonconsciously deployed cognitive processes: Evidence from masked congruence priming. *PLoS One,* 6(2), . doi:10.1371/journal.pone.0017095

Fitzgibbon, B.M., Enticott, P.G., Rich, A.N., Giummarra, M.J., Georgiou-Karistianis, N., & Bradshaw, J.L. (In Press). Mirror-sensory synaesthesia: exploring 'shared' sensory experiences as synaesthesia. *Neuroscience & Biobehavioral Reviews.* doi:10.1016/j.neubiorev.2011.09.006

Friedman, J., Latash, M.L., & Zatsiorsky, V.M. (2011). Directional variability of the isometric force vector produced by the hand in multi-joint planar tasks. *Journal of Motor Behavior, 46*(6), 451–463.

Koelewijn, L., Dumont, J.R., Muthukumaraswamy, S.D., Rich, A.N., & Singh, K.D. (2011). Induced and evoked neural correlates of orientation selectivity in human visual cortex. *NeuroImage, 54*(4), 2983-2993. doi:10.1016/j.neuroimage.2010.11.045

Manes, F., Roca, M., Torralva, T., Gleichgerrcht, E., Woolgar, A., Thompson, R., & Duncan, J. (In Press). The role of Area 10 (BA10) in human multitasking and in social cognition: A lesion study. *Neuropsychologia.*

Nahab, F.B., Kundu, P., Gallea, C., Kakareka, J., Pursley, R., Pohida, T., Miletta, N., Friedman, J., & Hallett, M. (2011). The Neural Processes Underlying Self-Agency. *Cerebral Cortex, 21*(1), 48-55.

Pridmore, R.W. (2011). Complementary colors theory of color vision: Physiology, color constancy, color mixture and color perception. *Color Research & Application, 36*, 394-412.

Woolgar, A., Hampshire, A., Thompson, R. & Duncan, J. (2011). Adaptive coding of task relevant information in frontoparietal cortex. *Journal of Neuroscience, 31*(41), 14592-14599. doi: 10.1523/?JNEUROSCI.2616-11.2011

Woolgar, A., Thompson, R., Bor, D., & Duncan, J. (2011). Multi-voxel coding of stimuli, rules and responses in the frontoparietal cortex. *NeuroImage, 56*(2), 744-752.

Zopf, R., Harris, J.A., & Williams, M.A. (2011). The influence of body-ownership cues on tactile sensitivity. Cognitive Neuroscience, 2(3-4), 147-154.

Zopf, R., Klose, U., & Karnath H.-O. (In Press). Evaluation of methods for detecting perfusion abnormalities after stroke in dysfunctional brain regions. *Brain Structure & Function.*

Zopf, R., Truong, S., Finkbeiner, M., Friedman, J., & Williams, M.A. (2011). Viewing and feeling touch modulates hand position for reaching. *Neuropsychologia, 49*(5), 1287-1293.

## Published abstracts

Awasthi, B., Sowman, P.F., Friedman, J., & Williams, M.A. (In Press). Behavioural and MEG studies of perception of low spatial frequency faces [Abstract]. *Clinical EEG and Neuroscience.*

Calleja, M.O., Coltheart, M., & Rich, A.N. (In Press). Can semantic information influence the guidance of attention by working memory? [Abstract]. *Journal of Vision.*

Chiou, R., Stelter, M., & Rich, A.N. (2011). Beyond colour perception: Auditory synaesthesia elicits visual experience of colour, shape, and spatial location [Abstract]. *Perception.*

Graham, S.L., Rich, A.N., Klistorner, A., & Williams, M.A. (In Press). Functional MRI reveals activation of visual cortex by adjacent stimuli in glaucomatous scotoma regions - perceptual fill-in? [Abstract]. *Investigative Ophthalmology and Visual Science.*

Horowitz, T.S., & Rich, A.N. (In Press). How do we search when things keep moving? Selection and segregation of dynamic displays in visual search [Abstract]. *Journal of Vision.*

Koelewijn, L., Rich, A.N., Muthukumaraswamy, S.D., & Singh, K.D. (2011). Modulation of the orientation-induced gamma response by visuospatial attention [Abstract]. *Perception, 40*(Suppl. ECVP), 47.

Rich, A.N., Chiou, R., Stelter, M., & Horowitz, T.S. (2011). The sight of sound: Interactions between audition and vision [Abstract]. *Perception.*

Williams, M.A., Rich, A.N., Klistorner, A., & Graham, S. (In Press). Neural filling-in? Increased response in deprived visual cortex when regions adjacent to a glucomatous scotoma are stimulated [Abstract]. *Perception.*

Woolgar A., Rich A.N., & Williams M.A. (2011). Top-down attention modulates multi-voxel representation of novel objects [Abstract]. *Proceedings of the Society for Neuroscience (SfN) Annual Meeting.*

Zeman, A., Obst, O., & Rich, A.N. (2011). Exploring mechanisms behind the Muller-Lyer illusion using an artificial feed-forward object recognition model [Abstract]. *Perception.*

# SYMPOSIA

## Keynote and Invited Presentations

Addis, D.R. (2011, August). Memory and the self in the past, present and future. In D.R. Addis (Chair), *Symposium on Memory and the Self in the Brain*. Keynote symposium conducted at the 5th International Conference on Memory (ICOM5), York, UK.

Barnier, A.J. (2011, November). *Hypnosis: From the Laboratory to the Clinic to the Courtroom*. Keynote paper presented at the Annual Conference of the New Zealand Society of Hypnosis, Palmerston North, New Zealand.

Coltheart, M. (2011, September). *Understanding Delusional Belief: A Cognitive-Neuropsychiatric Perspective*. Keynote presentation given at the Federation of European Societies of Neuropsychology (ESN) Congress, Basel, Switzerland.

Crain, S. (2011, December). *Some Principles and Parameters of Scope*. Keynote paper presented at the 5th International Conference on Formal Linguistics, Guangdong University of Foreign Studies, Guangdong, China.

Demuth, K. (2011, December). *Prosodic Constraints on Children's Variable Production of Grammatical Morphemes.* Keynote paper presented at the Australian Linguistic Society Conference, Canberra.

Hodges, J. (2011, January). *New directions in the assessment of FTD*. Keynote presentation given at the 4th Joint Meeting of the Australian Society for the Study of Brain Impairment and the International Neuropsychological Society, Auckland, New Zealand.

Hodges, J. (2011, March). *Master Class in Alzheimer's Disease Meeting*. Keynote colloquium at the Alzheimer's Disease Meeting (Pfizer), Sydney.

Hodges, J. (2011, May). *Early Onset Dementia - Clinical and Scientific Advances.* Keynote presentation given at the Educational Evening for GPs (Pfizer), Wollongong, Australia.

Hodges, J. (2011, May). *Episodic Memory in Semantic Dementia and behavioural variant FTD*. Keynote paper presented at the 9th Tsukuba International Conference on Memory (TIC-9), Tokyo.

Hodges, J. (2011, September). *The frontotemporal dementias: towards more accurate early diagnosis.* Keynote presentation given at the Federation of European Societies of Neuropsychology (ESN) Congress, Basel, Switzerland.

Hodges, J. (2011, November). *The clinical spectrum of cognitive changes in MND.* Keynote presentation given at the 22nd International Symposium on ALS/MND, Sydney.

Koldewyn, K., Jiang, Y. V., Weiglet, S., Pellicano, E., & Kanwisher, N. (2011, May). *Attention and executive function in children with ASD.* Invited poster session presented at the 10th International Meeting for Autism Research (IMFAR), San Diego.

Langdon, R. (2011, June). *Social skills training or social cognitive remediation for schizophrenia?* Invited symposium conducted at the Symposium on Cognitive Remediation for Schizophrenia at the Royal Australian and New Zealand College of Psychiatrists Annual Conference, Darwin, Australia.

Langdon, R. (2011, September). *The 2-factor approach to delusions and the distinction between immediate and reflective delusions.* Invited symposium conducted at the European Society for Cognitive Psychology (ESCoP) Conference, San Sebastian, Spain.

Langdon, R. (2011, December). *Insight in Early Psychosis.* Invited paper presented at the Australasian Society for Psychiatric Research Annual Conference, Dunedin, New Zealand.

McArthur, G.M. (2011, July). *Reading disability: Research and treatment.* Keynote paper presented at the More than Gadgets Conference, Perth.

McKay, R. (2011, August). *Explaining Misbelief.* Keynote presentation given at the Australian Cognitive Neuropsychology and Cognitive Neuropsychiatry (ACNCN) Research Forum, Sydney.

Miller, L. (2011, November). *Retrograde memory after focal thalamic stroke.* Invited paper presented at the Annual Conference of the Australian Psychological Society's College of Clinical Neuropsychologists, Sydney.

Nickels, L. (2011, September). *Semantic and phonological tasks in the treatment of word retrival.* Keynote presentation given at the Venice Summer School on Aphasia Rehabilitation, Venice, Italy.

Rich, A. (2011, August). In A. Rich (Chair), *Synaesthesia in focus - Examining behaviour and the brain beyond colour perception.* Keynote symposium conducted at the 34th European Conference on Visual Perception (ECVP), Toulouse, France.

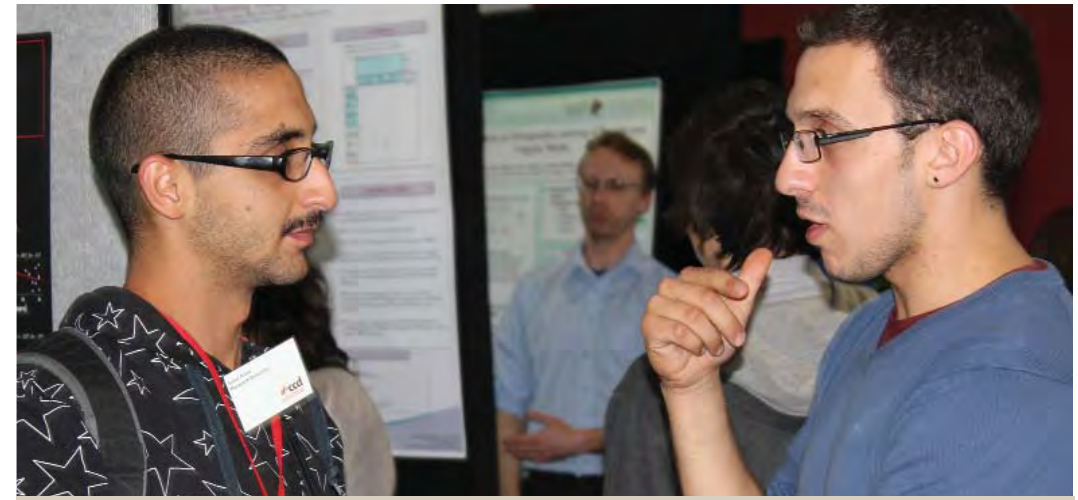
## Conference Papers and Symposia

Addis, D.R. (2011, June). *Hippocampal activity during future simulation: Effects of encoding and novelty.* Paper given at the International Society for Behavioral Neuroscience Meeting, Verona, Italy.

Addis, D.R. (2011, August). *Remembering the Past and Imagining the Future in Aging and Alzheimer's disease.* In D.R. Addis (Chair), Symposium on Memory and the Future in Clinical Disorders. Symposium conducted at the 5th International Conference on Memory (ICOM5), York, UK.

Addis, D.R. (2011, August). *Remembering the Future: Generating and encoding future simulations.* In R. Anderson & S. Dewhurst (Chair), Symposium on Memory and Future Thinking. Symposium conducted at the 5th International Conference on Memory (ICOM5), York, UK.

Al-Janabi, S., & Finkbeiner, M. (2011, April). *Do eye-gaze cues automatically orient spatial attention? Evidence from a masked-cueing task.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.



*Honours students Soheil Afshar and Nathan Caruana*

Baird, A., Kraiuhin, C., & McKay, R. (2011, July). *Social factors in focal retrograde amnesia.* Paper presented at the 4th Joint Meeting of the Australian Society for the Study of Brain Impairment and the International Neuropsychological Society, Auckland, New Zealand.

Baird, A., Hornberger, M., Lah, S., & Miller, L. (2011, November). In Baird, A. (Chair), *Retrograde amnesia.* Symposium conducted at the College of Clinical Neuropsychology Conference, Sydney.

Bapat, D., Breen, N., & Miller, L.A. (2011, November). *Correlates of whole figure rotations in the Rey Complex Figure: A retrospective analysis.* Paper presented at the College of Clinical Neuropsychologist Meeting, Sydney.

Barnier, A.J., Harris, C.B., Keil, P.G., & Sutton, J., & Dixon, R. (2011, June). *Individual versus collaborative recall of (nonpersonal) words and (personal) names and places in older married couples: Evidence for the social scaffolding of memory?* In A.J. Barnier, S. Rajaram, & J. Sutton (Chair), Scaffolding Memory: When People and Objects Help Remembering Paper presented at the 9th Biennial Meeting of the Society for Applied Research in Memory and Cognition, New York.

Barnier, A.J., Keil, P.G., Harris, C., Sutton, J., & Dixon, R. (2011, August). *Individual versus collaborative recall of simple words, our friends and our lives: Evidence for transactive memory in older married couples?* In W. Hirst, S. Rajaram, & A.J. Barnier (Chair), Social Aspects of Memory: Collaborative Remembering and Collective Memory Paper presented at the 5th International Conference on Memory, York, UK.

Barnier, A.J., Sutton, J., Harris, C.B., Keil, P. (2011, August). *Evidence for socially distributed memory in the collaborative recall of older married couples?* In J. Sutton (Chair), Memory, Extended Mind, and Distributed Cognition Paper presented at the 5th International Conference on Memory, York, UK.

Biedermann, B., Lorenz, A., & Nickels, L. (2011, August). *Heads and shoulders, knees and toes: Effects of plural dominance in aphasia.* Paper presented at the Perspectives on Language Disorders Workshop, Sydney.

Biedermann, B., Lorenz, A., Beyersmann, E., Nickels, L., & Schiller, N. (2011, August). *Plural dominance effects in picture naming.* Paper presented at the Australian Cognitive Neuropsychology and Cognitive Neuropsychiatry (ACNCN) Research Forum, Sydney.

Brock, J., Johnson, B., Reid, M., Bzishvili, S., & Witton, C. (2011, June). *A MEG study of dichotic pitch in children with autism spectrum disorder.* Paper presented at the 17th Annual Meeting of the Organisation for Human Brain Mapping, Quebec, Canada.

Brock, J., Johnson, B., Reid, M., Bzishvili, S., Hautus, M. & Witton, C. (2011, April). *Segregation of auditory objects in children with autism.* Paper presented at the Experimental Psychology Society Meeting, Oxford, UK.

Brock, J., Johnson, B.W., &Tesan, G. (2011, April). *Medial frontal contributions to the N400m sentence context effect.* Paper presented at the British Neuroscience Association Meeting, Harrogate, UK.

Brock, J., Reid, M., Bzishvili, S., Hautus, M. & Johnson, B. (2011, December). *Atypical brain responses to illusory auditory pitch in children with autism*. Paper presented at the Australasian Cognitive Neuroscience Conference, Sydney.

Burianova, H., Lee, Y., Grady, C.L., & Moscovitch, M. (2011, June). *Age-related changes in the functional network underlying face processing.* Paper presented at the Annual Meeting of the Organisation for Human Brain Mapping, Quebec, Canada.

Campbell, J., Hepner, I., & Miller, L.A. (2011, November). *Exploring age and sex effects on facets of topographical memory.* Paper presented at the College of Clinical Neuropsychologist Meeting, Sydney.

Caruana, N. & Brock, J. (2011, December). *Autistic traits and eye-movements during reading.* Paper presented at the Australasian Cognitive Neuroscience Conference, Sydney.

Castles, A., & Kohnen, S. (2011, April). *Pirates at parties: Letter Position Coding in Children.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Castles, A., & Kohnen, S. (2011, September). *Pirates at parties: Letter Position Coding in Children.* Paper presented at the

European Society for Cognitive Psychology (ESCoP) Conference, San Sebastian, Spain.

Connors, M.H., Barnier, A.J., Langdon, R., Coltheart, M., & Cox, R. (2011, August). *Using hypnosis to model the mirrored-self misidentification delusion: The mirror agnosia path*way. Paper presented at the Australian Cognitive Neuropsychology and Cognitive Neuropsychiatry (ACNCN) Research Forum, Sydney.

Crain, S., Goro, T., Notley, A., & Zhou, P. (2011, September). *A* parametric account of scope in child language. Paper presented at the Generative Approaches to Language Acquisition (GALA), Thessaloniki, Greece.

Croot, K., Ballard, K., & Hodges, J.R. (2011, June). *Apraxic versus phonological errors in primary progressive aphasia. Apraxia of speech: Mechanisms and symptoms.* Symposium conducted at the Satellite meeting to the 6th International Conference on Speech Motor Control, Groningen, The Netherlands.

Croot, K., Taylor, C. Nickels, L., Abel, S., Ruggero, L., Contini, E. , Savage, S., & Hodges, J.R. (2011, September). *The right word at the right time: word retrieval treatment in progressive aphasia.* Paper presented at the British Aphasiology Society Biennale International Conference, Reading, UK.

Croot, K., Taylor, C., Nickels, L., Abel, S., Ruggero, L., Contini, E., Savage, S., & Hodges, J.R (2011, September). *Word retrieval treatment for functionally relevant vocabulary in progressive aphasia.* Paper presented at the 26th Jahrestagung der Gesellschaft fuer Neuropsychologie, Aachen, Germany.

de Lissa, P., McArthur, G., & Castles, A. (2011, April). *Electrophysiological markers of orthographic familiarity: insights from Fixation-Related Potentials.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

de Lissa, P., McArthur, G., & Castles, A. (2011, August). *Insights into the development of orthographic familiarity through Fixation-Related Potentials: An eye for detail.* Paper presented at the 16th European Conference on Eye Movements, Marseille, France.

Dalton, M.A., Hornberger, M., & Piguet, O. (2011, August). *Healthy older adults show impaired recollection but intact novelty detection on associative memory tasks.* Paper presented at the Australian Cognitive Neuropsychology and Cognitive Neuropsychiatry (ACNCN) Research Forum, Sydney.

Davies, B., Yuen, I., & Demuth, K. (2011, December). *The acquisition of schwa.* Paper presented at the Australian Linguistic Society, Canberra.

Ewing, L., Rhodes, G., & Pellicano, E. (2011, April). *Face processing impairments in autism spectrum conditions cannot be explained by atypical reward value of faces.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Ewing, L., Rhodes, G., & Pellicano, E. (2011, May). *Can atypical face rewards explain face processing impairments in autism?* Paper presented at the Person Perception Seminar Series, University of Western Australia, Crawley, Australia.

Ewing, L., Rhodes, G., & Pellicano, E. (2011, November). *Can atypical face rewards explain face processing impairments in autism?* Paper presented at the Centre for Cognition and its Disorders (CCD) Annual Workshop, Macquarie University, Sydney.

Fieder, N., Nickels, L., & Biedermann, B. (2011, September). *Representation of mass and count nouns in the mental lexicon: Insights from mass/count errors in aphasia.* Paper presented at the 12th International Science of Aphasia Conference, Barcelona, Spain.

Finkbeiner, M. (2011, April). *Subliminal priming with near-perfect performance in the prime-classification task*. Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Finkbeiner, M. (2011, November). *Revealing the temporal dynamics of lexical processing through "changes of mind".* Paper presented at the 52nd Annual Meeting of the Psychonomic Society, Seattle, USA.

Finkbeiner, M., Friedman, J., Quek, G., & Al-Janabi, S. (2011, December). *Using reaching trajectories to reveal the dynamics of stimulus categorization.* Paper presented at the Australasian Cognitive Neurosciences Conference (ACNC), Sydney.

Fitzgerald, Z., Thayer, Z, Mohamed, A. & Miller, L. (2011, November). *Accelerated long-term forgetting in epilepsy: Using ambulatory EEG monitoring to determine the pathophysiology.* Paper presented at the College of Clinical Neuropsychologist Meeting, Sydney.

Friedman, J., & Finkbeiner, M. (2011, February). *Decomposition of hand trajectories to quantify evidence accumulation.* Paper presented at the Australasian Mathematical Psychology Conference, Melbourne.

Friedman, J., & Finkbeiner, M. (2011, June). *Optimal selection of arm movements during evidence accumulation.* Paper presented at the Computational Motor Control Workshop, Beer-Sheva, Israel.

Gandy, M., Sharpe, L., Nicholson-Perry, K., Thayer, Z., Miller, L. and Mohamed, A. (2011, October). *A randomized controlled trial of Cognitive Behavioral Therapy to Improve Mood and Quality of Life in Adults with Epilepsy.* Paper presented at the AACBT National Conference, Sydney.

Gascoigne, M., Webster, R.I., Barton, B., Gill, D., & Lah, S. (2011, August). *Accelerated verbal long-term forgetting in children with Idiopathic Generalised Epilepsy.* Paper presented at the 5th International Conference on Memory (ICOM5), York, UK.

Harris, A., Marsh, P., Langdon, R., Dark, F., & Allott, K. (2011, May). *Cognitive and social cognitive remediation therapy: treatment for a neglected aspect of severe mental illness.* Symposium conducted at the Royal Australian & New Zealand College of Psychiatrists, Darwin, Australia.

Harris, C.B., Barnier, A.J., & Bernsten, D. (2011, January). *Collaborative remembering of autobiographical events.* In W. Hirst, S. Rajaram, & A.J. Barnier (Chair), Social Aspects of Memory: Collaborative Remembering and Collective Memory Paper presented at the 5th International Conference on Memory, York, UK.

Harris, C.B., Barnier, A.J., Sutton, J., McIlwain, D., & Keil, P.G. (2011, June). *Being us: Shared remembering in older couples.* In A. Brown & J. Buckner (Chair), Construing the Self Across and Between the Lifespan Paper presented at the 9th Biennial Meeting of the Society for Applied Research in Memory and Cognition, New York.

Hayward, W.G., Crookes, K., Favelle, S.K., & Rhodes, G. (2011, July). *Does the own-race advantage in face processing have a basis in holistic processing?* Paper presented at the 5th International Conference on Memory (ICOM5), York, UK.

Heath, S., McMahon, K., Nickels, L., Angwin, A., MacDonald, A., van Hees, S., Johnson, K., & Copland, D. (2011, November). *Brain mechanisms underlying the facilitation of picture naming with a semantic task*. Paper presented at the Society for Neuroscience Annual Meeting, Washington, DC.

Heersmink, R. (2011, May). *Brain-Computer Interfaces: Epistemological and Phenomenological Issues.* Paper presented at the Australasian Philosophy Postgraduate Conference, Melbourne.

Heersmink, R. (2011, July). *Epistemological and Phenomenological Issues in the Use of Brain-Computer Interfaces.* Paper presented at the International Association for Computing and Philosophy Conference, Aarhus, Denmark.

Hodges, J.R. (2011, March). *Memory in Frontotemporal Dementia.* Paper presented at the 9th Tsukuba International Conference on Memory (TIC-9), Tokyo.

Hornberger, M., & Hodges, J.R. (2011, July). *Grey and white matter correlates of disinhibition in behavioural variant frontotemporal dementia and Alzheimer's Disease.* Paper presented at the International Conference on Alzheimer's Disease (ICAD), Paris.

Hsieh, S., Piguet, O., & Hodges, J.R. (2011, March). *Recognition of musical emotions in frontotemporal dementia. Neuroscience of Emotion and Emotion-Related Disorders.* Paper presented at the Inaugural Conference of the Rotman Research Institute & the Kunin-Lunenfeld Applied Research Unit, Toronto, Canada.

Hsieh, S., Piguet, O., & Hodges, J.R. (2011, July). *Are you happy? Knowledge of words that describe emotions in frontotemporal dementia.* Paper presented at the 4th Joint Meeting of the Australian Society for the Study of Brain Impairment and the International Neuropsychological Society, Auckland, New Zealand.

Huang, A., & Crain, S. (2011, December). *The Acquisition of the NPI renhe 'any' in Mandarin Chinese.* Paper presented at the 5th International conference on Formal Linguistics, Guangzhou, China.

Irish, M., Addis, D.R., Hodges, J., & Piguet, O. (2011, July). *Episodic Future Thinking in Frontotemporal dementia and Alzheimer's disease.* Paper presented at the International Neuropsychological Society Mid-Year Meeting, Auckland, New Zealand.

Irish, M., Hodges, J.R., & Piguet, O. (2011, July). *Impaired episodic future thinking in frontotemporal dementia – evidence for a compromised default network.* Paper presented at the 4th Joint Meeting of the Australian Society for the Study of Brain Impairment and the International Neuropsychological Society, Auckland, New Zealand.

Irish, M., Addis, D.R., Hodges, J., & Piguet, O. (2011, August). *Episodic Future Thinking in Frontotemporal dementia and Alzheimer's disease.* In D.R. Addis (Chair), Symposium on Memory and the Future in Clinical Disorders. Symposium conducted at the 5th International Conference on Memory (ICOM5), York, UK.

Irish, M., Hornberger, M., Lah, S., Foxe, D., Leslie, F., Hsieh, S., Savage, S., Miller, L., Hodges, JR., & Piguet, O. (2011, August). *Differential profiles of recent autobiographical memory retrieval in frontotemporal dementia.* Paper presented at the 5th International Conference on Memory (ICOM5), York, UK.

Irish, M., Hornberger, M., Lah, S., Foxe, D., Leslie, F., Hsieh, S., Savage, S., Miller, L., Hodges, JR., & Piguet, O. (2011, August). *Differential profiles of recent autobiographical memory retrieval in frontotemporal dementia.* Paper presented at the 5th International Conference on Memory (ICOM5), York, UK.

Jeffery, L., Rathbone, C., Reid, A., & Rhodes, G. (2011, April). *Children's face aftereffects transfer across changes in viewpoint.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Johnson, B.W., Crain, S., Tesan, G., & Reid, M. (2011, September). *In search of the LAD: A cross-language MEG brain imaging study.* Paper presented at the Generative Approaches to Language Acquisition (GALA), Thessaloniki, Greece.

Johnson, B.W., McArthur, G., Reid, M., Brock, J., & Crain, S. (2011, June). *A robust index of lateralized brain function in typically and atypically developing children.* Paper presented at the 17th Annual Meeting of the Organisation for Human Brain Mapping, Quebec, Canada.

Kinoshita, S., & Norris, D. (2011, November). *TrOuBles with OBs.* Paper presented at the 52nd Annual Meeting of the Psychonomic Society, Seattle, USA.

Kinoshita, S., Mozer, M., & Forster, K.I. (2011, February). *Dynamic adaptation to history of trial difficulty explains the effect of congruency proportion on masked priming.* Paper presented at the Australasian Mathematical Psychology Conference, Melbourne.

Kloth, N., Wiese, H., & Schweinberger, S.R. (2011, March). *Effekte des Alters auf die Bestimmung des Geschlechts von Gesichtern.* Paper presented at the 53rd Tagung experimentell arbeitender Psychologen (TeaP), Halle a.d Saale, Germany.

*PhD student Aijun Huang*

Koelewijn, L., Rich, A.N., Muthukumaraswamy, S.D., & Singh, K.D. (2011, August). *Modulation of the orientation-induced gamma response by visuospatial attention.* Paper presented at the 34th European Conference on Visual Perception (ECVP), Toulouse, France.

Koelewijn, L., Rich, A.N., Muthukumaraswamy, S.D., & Singh, K.D. (2011, December). *Neural processing of visual attention: modulation of the orientation-induced gamma response.* Paper presented at the Australasian Cognitive Neurosciences Conference (ACNC), Sydney.

Kohnen, S., Nickels, L., Castles, A., Friedmann, N., & McArthur, G. (2011, August). *When a diary is "something from a cow": Developmental Letter Position Dyslexia in English.* Paper presented at the Australian Cognitive Neuropsychology and Cognitive Neuropsychiatry (ACNCN) Research Forum, Sydney.

Kumfor, F., Hodges, J.R., & Piguet, O. (2011, August). *Emotional memory enhancement in semantic dementia and Alzheimer's Disease – Preliminary findings.* Paper presented at the Australian Cognitive Neuropsychology and Cognitive Neuropsychiatry (ACNCN) Research Forum, Sydney.

Krajenbrink, G., Nickels, L. & Jonkers, R. (2011, September). *Access to orthographic forms in letter-by-letter reading: Evidence for one underlying reading system.* Paper presented at the 12th International Science of Aphasia Conference, Barcelona.

Lah, S., & Smith M.L. (2011, August). *Verbal episodic and semantic memory in children with temporal lobe epilepsy: evidence of double dissociation in developmental context.* Paper presented at the 5th International Conference on Memory (ICOM5), York, UK.

Lah, S., & Smith, M.L. (2011, November). *Double dissociation between verbal episodic and semantic memory in children: Is it possible, and does it have differential impact on memory skills?* Paper presented at the College of Clinical Neuropsychology Conference, Sydney.

Lah, S., Tedder, J., Hornberger, M., & Miller, L. (2011, November). *Loss of memory for the past, but no problems in episodic future thinking in a patient with Korsakoff's disease.* Paper presented at the College of Clinical Neuropsychology Conference, Sydney.

Langdon, R. (2011, August). *Folie à deux resulting in serious violence.* Paper presented at the Australian Cognitive Neuropsychology and Cognitive Neuropsychiatry (ACNCN) Research Forum, Sydney.

Lodhia, V., Brock, J., Johnson, B.W., Hamm, J., & Hautus, M.J. (2011, December). *An investigation of perceptual processing in autistic spectrum disorder using mis-tuned harmonics.* Paper presented at the Australasian Cognitive Neuroscience Conference, Sydney.

Lodhia, V., Neiumdeniya, C., Hamm, J., Johnson, B., Brock, J., & Hautus, M.J. (2011, May). *Bottom up or top-down? An investigation of perceptual processing in ASD using dichotic pitch.* Paper presented at the International Meeting for Autism Research, San Diego.

MacDonald, A., Heath, S., McMahon, K., Angwin, A., Nickels, L., & Copland, D. (2011, September). *Neural substrates of short and long-term semantic facilitation of naming in aphasia.* Paper presented at the Stroke Society of Australasia Annual Scientific Meeting, Adelaide.

MacDonald, A., Heath, S., McMahon, K., Angwin, A., Nickels, L., & Copland, D. (2011, November). *Neural substrates of short and long-term repetition priming of naming in aphasia.* Paper presented at the Society for Neuroscience Annual Meeting, Washington, DC.

Marinus, E., & Castles, A. (2011, July). *Noisy neighbors: interference in the orthographic lexicon.* Paper presented at the Annual Meeting of the Society for the Scientific Study of Reading (SSSR), St. Pete Beach, USA.

Marsh, P. (2011, May). *A Novel Mental State Reasoning Training (MSRT) Program for Schizophrenia.* Paper presented at the The Royal Australian and New Zealand College of Psychiatrists (RANZAP) Conference, Darwin, Australia.

McArthur, G. (2011, December). *The MACCS Reading Training Study Phase 1.* Paper presented at the Intrepica company seminar, Varsity Lakes, Australia.

McArthur, G., Atkinson, C., & Ellis, D. (2011, December). *Can children's atypical passive auditory ERPs be normalised by training?* Paper presented at the Australasian Cognitive Neurosciences Conference (ACNC), Macquarie University, Sydney.

McKay, R., Efferson, C., & Fehr, E. (2011, October). *Shared delusions.* Paper presented at the European Society for Cognitive Psychology (ESCoP) Conference, San Sebastian, Spain.

Meier, S.L., Tippett, L.J., & Addis, D.R. (2011, July). *Assessment of orbital prefrontal cortex using fMRI in Amyotrophic Lateral Sclerosis: A Case study approach.* Paper presented at the International Neuropsychological Society Mid-Year Meeting, Auckland, New Zealand.

Miller Amberber, A., Nickels, L., Crain, S. & Coltheart, M. (2011, September). *Switching languages in bilingual aphasia: evidence of grammatical impairment from Rarotongan, Maltese, French and English.* Paper presented at the 12th International Science of Aphasia Conference, Barcelona.

Ng, T., Sowman, P., Brock, J., & Johnson, B. (2011, January). *Premovement brain activity in a bimanual load lifting task.* Paper presented at the 17th Annual Meeting of the Organisation for Human Brain Mapping, Quebec, Canada.

Ng, T., Sowman, P., Brock, J., & Johnson, B. (2011, December). *Temporal dynamics of motor coordination in a bimanual load lifting task.* Paper presented at the Australasian Cognitive Neuroscience Conference, Sydney.

Nickels, L., Taylor, C., Croot, K., Abel, S., Ruggero, L., Contini, E., Savage, S. & Hodges, J. (2011, September). *Can retrieval of functionally relevant vocabulary be improved in progressive aphasia?* Paper presented at the 12th International Science of Aphasia Conference, Barcelona.

Norris, D., & Kinoshita, S. (2011, September). *Three languages, thousands of words, one model. Simulating the DLP, ELP, and FLP.* Paper presented at the European Society for Cognitive Psychology (ESCoP) Conference, San Sebastian, Spain.

Palermo, R., Willis, M.L., Rivolta, D, McKone, E., Wilson, C.E., & Calder, A.J. (2011, April). *Holistic coding of facial expression and facial identity is impaired in congenital prosopagnosia.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Parviz, M., Johnson, M., Johnson, B.W., & Brock, J. (2011, December). *Using language models and latent semantic analysis to characterize the N400m neural response.* Paper presented at the Australasian Cognitive Neuroscience Conference, Sydney.

Payne, J.M., Pickering, T., Porter, M., Oates, E.C., & North, K.N. (2011, January). *Longitudinal assessment of cognition and T2-hyperintensities in NF1: an 18 year study.* Paper presented at the Children's Tumor Foundation Annual Conference, Jackson Hole, USA.

Piguet, O. (2011, July). *Emotion processing in nonfluent primary progressive aphasias and Alzheimer's disease.* Paper presented at the 4th Joint Meeting of the Australian Society for the Study of Brain Impairment and the International Neuropsychological Society, Auckland, New Zealand.

Piguet, O., Gleeson, D., Lah, S., Miller, L., & Hodges, J.R. (2011, July). *Emotion Processing in Nonfluent Primary Progressive Aphasias and Alzheimer's Disease.* Paper presented at the 4th Joint Meeting of the Australian Society for the Study of Brain Impairment and the International Neuropsychological Society, Auckland, New Zealand.

Porter, M., Freeth, M., Hanley, M., & Riby, D. (2011, April). *Attention to social information in Autism and Williams syndrome.* Symposium conducted at the Society for Research in Child Development Biennial Meeting, Montreal, Canada.

Quek, G., & Finkbeiner, M. (2011, April). *Pointing to the locus of attentional effects in subliminal priming.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Renvall, K., Nickels, L., & Davidson, B. (2011, June). *How to choose the most "relevant" and "functional" vocabulary for word retrieval treatment?* Paper presented at the 3rd Nordic Aphasia Conference , Helsinki, Finland.

Rich, A., Chiou, R., Stelter, M., & Horowitz, T. (2011, August). *The sight of sound: Interactions between audition and vision.* Symposium conducted at the 34th European Conference on Visual Perception (ECVP), Toulouse, France.

Rivolta, D., Schmalzl, L., Palermo, R., & Williams, M.A. (2011, August). *Multi-voxel pattern analysis of fMRI data reveals abnormal anterior temporal lobe activity in congenital prosopagnosia.* Paper presented at the 34th European Conference on Visual Perception (ECVP), Toulouse, France.

Savage, S., Lillo, P., Kumfor, F., Hornberger, M., Piguet, O., & Hodges, J. (2011, July). *Emotion Perception in MND and FTD.* Paper presented at the 4th Joint Meeting of the Australian Society for the Study of Brain Impairment and the International Neuropsychological Society, Auckland, New Zealand.

Savage, S., Lillo, P., Kumfor, F., Hornberger, M., Piguet, O., & Hodges, J. (2011, December). *Emotion Processing in MND and FTD.* Paper presented at the 22nd International Symposium on ALS/MND, Sydney.

Schacter, D.L., & Addis, D.R. (2011, January). *Episodic simulation: Evidence from aging, amnesia, and neuroimaging.* Paper presented at the Dallas Aging and Cognition Conference, Dallas, Texas.

Selwood, A., Barnier, A.J., Harris, C.B., Hung, L., Sie, A.A., Pegg, K., & Conway, M.A. (2011, August). *Trying to extend the think/no-think (TNT) paradigm to autobiographical memories.* Paper presented at the 5th International Conference on Memory, York, UK.

Stone, C.B., Barnier, A.J., Sutton, J., & Hirst, W. (2011, August). *Forgetting our shared, autobiographical memories through conversation: Socially shared retrieval-induced forgetting within intimate couples.* In W. Hirst, S. Rajaram, & A.J. Barnier (Chair), Social Aspects of Memory: Collaborative Remembering and Collective Memory Paper presented at the 5th International Conference on Memory, York, UK.

Tedder, J., Miller, L., & Lah, S. (2011, August). *Episodic future thinking: is recall of past personal experiences necessary?* Paper presented at the 5th International Conference on Memory (ICOM5), York, UK.

Temler, M., & Barnier, A.J. (2011, June). *Historical truth vs. narrative truth: Tracking the past.* Paper presented at the Agent Tracking and Its Disorders Workshop, Sydney.

Temler, M., Barnier, A.J., Sutton, J., & McIlwain, D. (2011, August). *Personality Construct and Social Cues Impact the Narrative Style and Accuracy of Memories of Unshared Personal Events.* Paper presented at the 5th International Conference on Memory (ICOM5), York, UK.

Temler, M., Barnier, A.J., Sutton, J., & McIlwain, D. (2011, August). *Personality construct and social cues impact the narrative style and accuracy of memories of unshared personal events.* Paper presented at the 5th International Conference on Memory, York, UK.

Tesan, G., Johnson, B.W., & Crain, S. (2011, December). *Evidence for automatic linguistic processing in preschool children: a magnetoencephalography study.* Paper presented at the 21st meeting of the Australasian Society for Psychophysiology, Sydney.

Thornton, R. & Kiguchi, H. (2011, September). *Connectivity effects in child grammar.* Paper presented at the Generative Approaches to Language Acquisition 2011, Thessaloniki, Greece.

Wang, H.-C., Castles A., & Nickels, L. (2011, April). *The effect of word regularity and pre-existing reading skills on orthographic learning of regular and irregular words.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Wang, H.-C., Castles A., & Nickels, L. (2011, July). *Orthographic learning of regular and irregular words in skilled and less-skilled readers.* Paper presented at the Annual Meeting of the Society for the Scientific Study of Reading (SSSR), St. Pete Beach, USA.

Willis, M.L., Palermo, R., & Burke, D. (2011, April). *Judging Approachability on the Face of It.* Paper presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Wilson, E., Brock, J., & Palermo, R. (2011, May). *Visual scanning strategies and facial identity recognition in autism spectrum disorder.* Paper presented at the 10th International Meeting for Autism Research (IMFAR), San Diego.

Woolgar, A. (2011, December). *Multi-voxel coding in frontal, parietal and visual cortices: the effect of top-down attention on the representation of novel objects.* Paper presented at the Australasian Cognitive Neurosciences Conference (ACNC), Sydney.

Xu, N., Demuth, K., & Cox, F. (2011, December). *Sequential Bilingual (Mandarin-English) Children's Production of Australian English Codas.* Paper presented at the Australian Linguistic Society Conference, Canberra.

Yau, S.H. & Brock, J. (2011, December). *Neuromagnetic responses to speech and nonspeech sounds and autism.* Paper presented at the Australasian Cognitive Neuroscience Conference, Sydney.

Yuen, I., Demuth, K. & Johnson, M. (2011, August). *Prosodic structure in child speech planning and production.* Paper presented at the International Congress of Phonetic Sciences, Hong Kong, China.

Zhou, P., Goro, T., & Notley, A. (2011, September). *The logic of focus in child language.* Paper presented at the Generative Approaches to Language Acquisition (GALA), Thessaloniki, Greece.

# Conference Posters

Abel, S., Taylor, C., Nickels, L., Ruggero L., Savage, S., Hodges, J.R., & Croot, K. (2011, May). *Therapy of word retrieval deficits for patients with progressive language impairments.* Poster session presented at the Alzheimer's Australia 14th national conference, Brisbane.

Al-Janabi, S., & Finkbeiner, M. (2011, December). *Effective processing of masked eye gaze requires volitional control.* Poster session presented at the Australasian Cognitive Neurosciences Conference (ACNC), Sydney.

Altmann, C.S., Kloth, N., Schweinberger, S.R. (2011, March). *Have you got the look? U?ber den Einfluss von Attraktivita?t auf die Wahrnehmung von Blickkontakt.* Poster session presented at the 53rd Tagung experimentell arbeitender Psychologen (TeaP), Halle a.d Saale, Germany.

Awasthi, B., Friedman, J., & Williams, M.A. (2011, November). *Delayed processing of low spatial frequency faces in developmental prosopagnosia.* Poster session presented at the Centre for Cognition and its Disorders (CCD) Annual Workshop, Macquarie University, Sydney.

Awasthi, B., Sowman, P.F., Friedman, J., & Williams, M.A. (2011, December). *Behavioural and MEG studies of perception of low spatial frequency faces.* Poster session presented at the Australasian Cognitive Neurosciences Conference (ACNC), Sydney.

Bedford, R., Nardini, M., Pellicano, E., Begus, K., & Mareschal, D. (2011, May). *Integration of visual cues in adolescents with an autism spectrum disorder.* Poster session presented at the 11th Annual Meeting of the Vision Sciences Society (VSS), Naples, USA.

Bentvelzen, A., McArthur, G., Johnson, B., Willis, M., Lee, S., & Savage, G. (2011, November). *Material-specific memory lateralisation depends on modality: event-related EEG.* Poster session presented at the Centre for Cognition and its Disorders (CCD) Annual Workshop, Macquarie University, Sydney.

Bentvelzen, A., McArthur, G., Johnson, B., Willis, M., Lee, S., & Savage, G. (2011, December). *Material-specific memory lateralisation depends on modality: event-related EEG.* Poster session presented at the Australasian Cognitive Neurosciences Conference (ACNC), Sydney.

Biedermann, B., Lorenz, A., Beyersmann, E., Schiller, N., & Nickels, L. (2011, September). *Plural dominance effects in picture naming for language-impaired and unimpaired speakers: A comparison.* Poster session presented at the European Society for Cognitive Psychology (ESCoP) Conference, San Sebastian, Spain.

Bull, P.N., Kensinger, E.A., & Addis, D.R. (2011, July). *Type of recognition test may influence the relative contributions of familiarity and recollection when recognising emotional visual images.* Poster session presented at the International Neuropsychological Society Mid-Year Meeting, Auckland, New Zealand.

Burrell, J., Hornberger, M., Carpenter, R., Kiernan, M., Hodges, J.R. (2011, October). *Abnormal Saccades Detect Frontal Dysfunction in Motor Neuron Disease.* Poster session presented at the Australian and New Zealand Association of Neurologists (ANZAN) clinical neurophysiology workshop, Gold Coast, Australia.

Burrell, J., Hornberger, M., Carpenter, R., Kiernan, M., Hodges, J.R. (2011, November). *Saccadic eye movements in Motor Neuron Disease and Frontotemporal Dementia.* Poster session presented at the 22nd International Symposium on ALS/MND, Sydney.

Burrell, J., Kiernan, M., Vucic, S., Hodges, J.R. (2011, November). *Clinical and neurophysiological evidence of Motor Neuron Dysfunction in Frontotemporal Dementia.* Poster session presented at the 22nd International Symposium on ALS/MND, Sydney.

Burrell, J.R., Kiernan, M. C., Vucic, S., Hodges, J.R. (2011, April). *Motor Neuron Dysfunction in Frontotemporal Dementia.* Poster session presented at the 63rd Annual Meeting of the American Academy of Neurology, Honolulu, USA.

Dalton, M.A., Hornberger, M., & Piguet, O. (2011, November). *Healthy older adults show impaired recollection but intact novelty detection on associative memory tasks.* Poster session presented at the UNSW Brain Sciences Symposium, University of New South Wales, Sydney.

Dalton, M.A., Weickert, T., Hodges, J.R., Piguet, O., & Hornberger, M. (2011, November). *Impaired acquisition rates of probabilistic associative learning in frontotemporal dementia is associated with fronto-striatal dysfunction.* Poster session presented at the Society for Neuroscience (SfN) Annual Meeting, Washington, DC.

Fieder, N., Nickels, L., & Biedermann, B. (2011, September). *Effects of countability on lexical processing in aphasia.* Poster session presented at the Biennial International Conference of the British Aphasiology Society, Reading, UK.

Friedman, J. & Finkbeiner, M. (2011, November). *Selection of arm movements during evidence accumulation.* Poster session presented at the Advances in Computational Motor Control, Washington, DC.

Friedman, J. & Finkbeiner, M. (2011, November). *The effect of a movement initiation deadline on a perceptual categorisation task performed using arm movements.* Poster session presented at the Society for Neuroscience (SfN) Annual Meeting, Washington, DC.

*Research Assistant, Ainsley Read*

Ghosh, B., Hodges, J., & Rowe, J. (2011, June). *Longitudinal assessment of progressive supranuclear palsy and determination of the optimum test for monitoring deterioration.* Poster session presented at the 15th International Congress of Parkinson's Disease and Movement Disorders, Toronto, Canada.

Ghosh, B., Hodges, J., & Rowe, J. (2011, October). *Cognitive deficits in progressive supranuclear palsy are stable over one year.* Poster session presented at the Association of British Neurologists (ABN) Annual Meeting, Newcastle, UK.

Hayward, W.G., Crookes, K., Favelle, S.K., & Rhodes, G. (2011, January). *Why are face composites difficult to recognise?* Poster session presented at the 11th Annual Meeting of the Vision Sciences Society (VSS), Naples, USA.

Hsieh, S., Piguet, O., & Hodges, J.R. (2011, March). *Are you happy? Knowledge of words that describe emotions in frontotemporal dementia.* Poster session presented at the Inaugural Conference of the Rotman Research Institute and the Kunin-Lunefeld Applied Research Unit, Toronto, Canada.

Kloth, N., Schweinberger, S.R., & Wiese, H. (2011, April). *The influence of facial age on gender perception: An ERP study on face categorization.* Poster session presented at the Cognitive Neuroscience Society (CNS) meeting, San Francisco.

Kwan, D., Carson, N., Addis, D.R., & Rosenbaum, R.S. (2011, April). *Episodic Construction vs. Elaboration: Evidence from Developmental Amnesia.* Poster session presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco.

Larsen, L., McArthur, G., Kohnen, S., & Nickels, L. (2011, November). *The Letter-Sound Test (LeST): Norms and children's learning of letter-sound rules.* Poster session presented at the Centre for Cognition and its Disorders (CCD) Annual Workshop, Macquarie University, Sydney.

Larsen, L., McArthur, G., Kohnen, S., Nickels, L., & Castles, A. (2011, December). *The Letter-Sound Test (LeST): Norms and children's learning of letter-sound rules.* Poster session presented at the ResCom, UWS, Sydney.

Leyton, C.E., Savage, S., Piguet, O., & Hodges, J.R. (2011, November). *Language and amnesic presentation of Alzheimer's Disease: Two sides of the same coin.* Poster session presented at the World Congress of Neurology (WCN), Marrakesh, Morocco.

Leyton, C.E., Villemagne, V.L., Savage, S., Pike, K.E., Ballard, K.J., Piguet, O., Burrell, J.R., Rowe, C.C., & Hodges, J.R. (2011, November). *Primary Progressive Aphasia: application of the International Consensus Criteria and validation using Ab imaging.* Poster session presented at the World Congress of Neurology (WCN), Marrakesh, Morocco.

Lillo, P., Savage, S., & Hodges, J.R. (2011, December). *MND and FTD: continuum or overlap?* Poster session presented at the 22nd International Symposium on ALS/MND, Sydney.

MacDuffie, K.E., Johnson, E.B., Iyengar, T., Addis, D.R., & Adcock, R.A. (2011, April). *Reward facilitates construction and later memory of autobiographical episodes.* Poster session presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco.

Mahajan, Y., & McArthur, G. (2011, April). *Maturation of auditory event-related potentials across adolescence.* Poster session presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco.

Marinus, E., de Jong, P.F., & Nation, K. (2011, April). *The use of rime units and neighbourhood size effects in English and Dutch beginning readers.* Poster session presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Marstaller, L. & Burianova, H. (2011, November). *The interaction of co-speech gestures and higher-level executive processes.* Poster session presented at the 52nd Meeting of the Psychonomic Society, Seattle.

Martin, V.C., Schacter, D.L., Corballis, M.C., & Addis, D.R. (2011, April). *Anterior and posterior hippocampal connectivity during the encoding of future simulations.* Poster session presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco.

Martin, V.C., Schacter, D.L., Corballis, M.C., & Addis, D.R. (2011, July). *Prior construction of imagined events affects degree of core autobiographical network activation.* Poster session presented at the International Neuropsychological Society Mid-Year Meeting, Auckland, New Zealand.

McCormick, K.A.A., Searle, J.A., & Addis, D.R. (2011, July). *The Influence of Visual/Verbal Abilities and List Concreteness on Susceptibility to False Memories.* Poster session presented at the International Neuropsychological Society Mid-Year Meeting, Auckland, New Zealand.

Mickley Steinmetz, K.R., Addis, D.R., & Kensinger, E.A. (2011, November). *How does Emotional Processing Lead to Increased Memory Confidence? A fMRI examination at encoding.* Poster session presented at the Society for Neuroscience (SfN) Annual Meeting, Washington, DC.

Notley, A., Thornton, R., & Crain, S. (2011, July). *Children's interpretation of the logical words 'not', 'every', and 'or'.* Poster session presented at the 12th International Congress for the Study of Child Language, Universite du Quebec a Montreal, Montreal, Canada.

Notley, A., Thornton, R., & Crain, S. (2011, August). *Children's interpretation of the logical words 'not', 'every', and 'or'.* Poster session presented at the Harvard-Australia Workshop on: Language, Learning and Logic, Macquarie University, Sydney.

O'Callaghan, C., Hodges, J.R., & Hornberger, M. (2011, January). *A Convergent Approach Towards Disinhibition in Frontotemporal Dementia.* Poster session presented at the 4th Joint Meeting of the Australian Society for the Study of Brain Impairment and the International Neuropsychological Society, Auckland, New Zealand.

Palermo, R., Rivolta, D., Wilson, C.E., & Jeffery, L. (2011, May). *Abnormal adaptive coding of identity in congenital prosopagnosia.* Poster session presented at the 11th Annual Meeting of the Vision Sciences Society (VSS), Naples, USA.

Pellicano, E., Murphy, D., Attucci, C., Klaric, E., & Burr, D. (2011, May). *Number sense in autism.* Poster session presented at the 10th International Meeting for Autism Research (IMFAR), San Diego.

Piguet, O. (2011, July). *Emotion processing in progressive nonfluent aphasia, logopenic progressive aphasia and Alzheimer's disease.* Poster session presented at the International Conference on Alzheimer's Disease (ICAD), Paris.

Piguet, O., Gleeson, L., Lah, S., Miller, L., & Hodges, J.R. (2011, July). *Comparing facial emotion processing in progressive nonfluent aphasia, logopenic progressive aphasia and Alzheimer's Disease.* Poster session presented at the International Conference on Alzheimer's Disease (ICAD), Paris.

Rascovsky, K., Hodges, J., Grossman, M., Knopman D., Mendez, M., Kramer, J., Bruce, L. Miller, B., Piguet, O., & Lillio, P. (2011, July). *Determinants of Survival in Autopsy-Confirmed Patients with Behavioral Variant Frontotemporal Dementia (bvFTD): Second Report of the International bvFTD Criteria Consortium (FTDC).* Poster session presented at the International Conference on Alzheimer's Disease (ICAD), Paris.

Schiller, N.O., Verdonschot, R., Kiyama, S., Tamaoka, K., Kinoshita, S., & La Heij, W. (2011, September). *The functional unit of Japanese word naming: Evidence from masked priming.* Poster session presented at the European Society for Cognitive Psychology (ESCoP) Conference, San Sebastian, Spain.

Su, Y. (2011, April). *Children's Knowledge of Scalar Implicatures in Mandarin Chinese.* Poster session presented at the 38th Australasian Experimental Psychology Conference (EPC), Auckland, New Zealand.

Su, Y. (2011, August). *Disjunction and Conditionals in Child Mandarin.* Poster session presented at the Harvard-Australia Workshop on: Language, Learning and Logic, Macquarie University, Sydney.

Temler, M., Barnier, A.J., Sutton, J., & McIlwain, D. (2011, June). *Autobiographical memory distortion in the absence of misinformation: Social contagion without contagion.* Poster session presented at the Society for Applied Research in Memory and Cognition (SARMAC) IX, New York.

Temler, M., Barnier, A.J., Sutton, J., & McIlwain, D. (2011, November). *Autobiographical memory distortion in the absence of misinformation: Social contagion without contagion.* Poster session presented at the Centre for Cognition and its Disorders (CCD) Annual Workshop, Macquarie University, Sydney.

Tesan, G., Johnson, B. & Crain, S. (2011, June). *An MEG study of the negative polarity item any to assess sentence-level semantic processing.* Poster session presented at the 17th Annual Meeting of the Organisation for Human Brain Mapping, Quebec, Canada.

Tham, W., Reid, M., Tesan, G. Johnson, B., & Crain, S. (2011, June). *Rocket-ship MEG: an interactive video game environment to facilitate brain measurements in children.* Poster session presented at the 17th Annual Meeting of the Organisation for Human Brain Mapping, Quebec, Canada.

Thornton, R. & Tesan, G. (2011, September). *Sentential negation in child grammar*. Poster session presented at the Generative Approaches to Language Acquisition 2011, Thessaloniki, Greece.

Van Mulukom, V., Roberts, R.P., Schacter, D.L., Corballis, M.C., & Addis, D.R. (2011, July). *Hippocampal and Amygdalar Connectivity during Simulation of Novel Future Events.* Poster session presented at the International Neuropsychological Society Mid-Year Meeting, Auckland, New Zealand.

Van Mulukom, V., Schacter, D.L., Corballis, M.C., & Addis, D.R. (2011, June). *Hippocampal and Amygdalar Responses to the Novelty of Future Simulations.* Poster session presented at the Annual Meeting of the Organisation for Human Brain Mapping, Quebec, Canada.

Woolgar, A., Rich, A., & Williams, M. (2011, November). *Top-down attention modulates multi-voxel representation of novel objects.* Poster session presented at the Meeting of the Society for Neuroscience, Washington, DC.

# Other Invited Presentations

Addis, D.R. (2011, March). *How the brain uses the past to imagine the future.* Invited presentation given at the Cognitive Seminar Series, Department of Psychology, University of Texas, Austin, USA.

Addis, D.R. (2011, March). *The Past and the Future: Remembering and Imagining in Young and Older Adults.* Invited colloquium at the Centre for Vital Longevity, University of Texas, Dallas, USA.

Addis, D.R. (2011, July). *How the brain uses the past to imagine the future*. Invited presentation given at the Rotman Research Institute Seminar Series, Toronto, Canada.

Bullot, N.J. (2011, March). *The artful mind meets art history: Toward a psycho-historical framework for the cognitive science of art.* Invited presentation given at the Department of Philosophy, Macquarie University, Sydney.

Bullot, N.J. (2011, May). *Apparent animacy and modularity: Minding the gap between the perception of animates and the understanding of other minds.* Invited presentation given at the Department of Philosophy, University of Wollongong, Wollongong, Australia.

Byrne, B. (2011, May). *Reading lessons from twins.* Invited colloquium at the Karolinska Institute Colloquia, Stockholm, Sweden.

Byrne, B. (2011, August). *Early literacy development: Tracking the influences of genes, homes, teachers, schools and countries*. Invited colloquium at the Southern Cross University Colloquia, Coffs Harbour, Australia.

Byrne, B. (2011, September). *The learning in learning disabilities: Insights from a behaviour-genetic study of twin children.* Invited colloquium at the University of New South Wales Colloquium, Sydney.

Carruthers, G. (2011, August). *Making sense of spousal revenge filicide: a motivational hypothesis and testable predictions.* Invited presentation given at the Humboldt University, Berlin, Germany.

Crain, S. (2011, April). *Scope Parameters*. Invited colloquium at the Colloquia at Beijing Language and Culture University, Beijing.

Crain, S. (2011, April). *Stay Connected.* Invited colloquium at the Colloquia at University of Western Australia, Perth.

Crain, S. (2011, May). *Unification in Child Language.* Invited colloquium at the Colloquia at University of California, San Diego.

Crain, S. (2011, May). *Linguistic Universals.* Invited colloquium at the Colloquia at LaTrobe University, Melbourne.

Crain, S. (2011, June). *Children's Conditionals.* Invited colloquium at the Colloquia at Australian National University, Canberra.

Crain, S. (2011, June). *How Children Interpret Conditionals.* Invited colloquium at the Colloquia at Australian National University, Canberra.

Crain, S. (2011, August). *All languages are not the same.* Invited colloquium at the Colloquia at The University of New England, Armidale, Australia.

Crain, S. (2011, December). *Child language: A biolinguistic perspective.* Invited colloquium at the Colloquia at The College of Foreign Languages, Tianjin Normal University, Tianjin, China.

Crain, S. (2011, December). *Principles and parameters of scope in child language.* Invited colloquium at the Colloquia at The College of Foreign Languages, Tianjin Normal University, Tianjin, China.

Crain, S. (2011, December). *Stay Connected.* Invited colloquium at the Colloquia at The College of Foreign Languages, Tianjin Normal University, Tianjin, China.

Crain, S., & Zhou, P. (2011, December). *Principles and parameters of scope in child language.* Invited presentation given at the Tianjin Normal University, Tianjin, China.

Croot, K.P., & Taylor, C. (2011, June). *Update on progressive aphasia*. Invited presentation given at the NSW Speech Pathology Adult Neurogenic Communication Interest Group, Sydney.

Demuth, K. (2011, March). *Tides of change: tracing language contact in Island Melanesia.* Invited presentation given at the La Trobe University Workshops, Victoria, Australia.

Demuth, K. (2011, April). *Prosodic Constraints on Children's Variable Production of Grammatical Morphemes.* Invited presentation given at the Flinders University, Speech Pathology and Audiology, Adelaide.

Demuth, K. (2011, April). *Phonology/Morphology interactions in children's early speech.* Invited presentation given at the University of Adelaide, Psychology Department Talks, Adelaide.

Demuth, K. (2011, May). *Plenary Address.* Invited presentation given at the Research Center on Multilingualism, University of Hamburg, Hamburg, Germany.

Demuth, K. (2011, May). *Phonological Effects on the Perception and Production of Grammatical Morphemes.* Invited presentation given at the GISP, University of Grenoble Talks, Grenoble, France.

Demuth, K. (2011, May). *Prosodic Constraints on Children's Variable Production of Grammatical Morphemes.* Invited presentation given at Potsdam University, Linguistics Department Talks, Potsdam, Germany.

Demuth, K. (2011, June). *Phonological Effects on the Perception and Production of Grammatical Morphemes.* Invited presentation given at the University of Auckland Speech Science Talks, Auckland, New Zealand.

Demuth, K. (2011, July). *Understanding Variability in the Production of Grammatical Morphemes*. Invited presentation given at the Santa Fe Institute Talks, Santa Fe, USA.

Finkbeiner, M. (2011, November). *Revealing the dynamics of categorization through reaching trajectories.* Invited presentation given at the Psychology Colloquium Series, University of Sydney, Sydney.

Hodges, J. (2011, April). *Unusual behavioural presentations of dementia.* Invited presentation given at the Australian and New Zealand Association of Neurologists (ANZAN) Registrar's Training Weekend, Melbourne.

Hodges, J. (2011, May). *What's new in Frontotemporal Dementia?* Invited presentation given at the West Suffolk Hospital, Edmunds, UK.

Hodges, J. (2011, June). *From FUS to fibs: what's new in Frontotemporal Dementia?* Invited presentation given at the Department of Neurology, Cambridge University Hospitals, Cambridge, UK.

Hodges, J. (2011, September). *Young Onset Dementia - FTD variants and cognitive screening using the ACE in YOD People.* Invited presentation given at the Younger Onset Dementia: The Challenges Newcastle Clinical Forum, Newcastle, Australia.

Hodges, J. (2011, October). *FTD: from FUS to Fibs.* Invited presentation given at the Cairns Society Meeting, Adelaide.

Hodges, J. (2011, October). *What is FTD and FTD Updates.* Invited presentation given at the Eastern Cognitive Disorders Clinic, Melbourne.

Hodges, J. (2011, December). *Darkness visible or beginning to see the light: FTD and the phenocopy syndromes.* Invited presentation given at the British Neuropsychiatry Teaching Weekend, Oxford, UK.

Kinoshita, S. (2011, September). *Masked priming in the Bayesian Reader.* Invited presentation given at the University of Bangor, Bangor, UK.

Kinoshita, S. (2011, September). *Masked priming in the Bayesian Reader.* Invited presentation given at the University of Vienna, Vienna, Austria.

Kinoshita, S. (2011, October). *Masked priming in the Bayesian Reader.* Invited presentation given at the Basque Center on Cognition, Brain and Language, Basque Country, Spain.

Kinoshita, S. (2011, October). *Dynamic adaptation to history of trial difficulty explains the effect of congruency proportion on masked priming.* Invited presentation given at the Basque Center on Cognition, Brain and Language, Basque Country, Spain.

Lah, S. (2011, October). *Memory disorders in children with epilepsy: Types, evaluation and treatment.* Invited presentation given at the Children's Hospital Educational Research Institute Conference, Sydney.

Langdon, R. (2011, June). *Theory of mind in schizophrenia.* Invited presentation given at the Brain and Mind Research Institute Colloquium, University of Sydney, Sydney.

Langdon, R. (2011, October). *Theory of mind and schizophrenia*. Invited presentation given at the University of Queensland Psychology Colloquium, Brisbane.

Palermo, R. (2011, April). *Intact and impaired face processes in congenital prosopagnosia.* Invited presentation given at the School of Psychology, University of Sydney, Sydney.

Palermo, R. (2011, May). Insights into face processing from congenital prosopagnosia. Invited presentation given at the School of Psychology, University of New South Wales, Sydney.

Palermo, R. (2011, June). *The science of the face.* Invited presentation given at the Department of Psychology, The Australian National University, Canberra.

Palermo, R. (2011, July). *Insights into face processing from congenital prosopagnosia.* Invited presentation given at the School of Psychology, University of Adelaide, Adelaide.

Palermo, R. (2011, August). *The science of the face.* Invited presentation given at the School of Psychology, University of Western Australia, Crawley, Australia.

Pellicano, E. (2011, January). *The role of attention in the development of executive function.* Invited presentation given at the Workshop on 'Attention in Autism', City University, London.

Pellicano, E. (2011, February). *Executive function in autism.* Invited paper presented at the Meeting entitled, "Attention deficits in autism" organised by Prof. Nancy Kanwisher and Prof. Yuhong Jiang on behalf of the Simons Foundation, New York.

Pellicano, E. (2011, April). *Children with autism search differently in a large-scale context.* Invited presentation given at the Seminar for the Department of Child Psychiatry, Institute of Psychiatry, London.

Pellicano, E. (2011, May). *Children with autism search differently in a large-scale context.* Invited presentation given at the Seminar for the Wales Autism Research Centre, Cardiff University, Cardiff, UK.

Pellicano, E. (2011, May). *Understanding the cognitive profile of autism: how we might use this knowledge to inform real life skills in autism.* Invited presentation given at the 1st Baston House School Conference, Bromley, UK.

Pellicano, E. (2011, May). *Children with autism search differently in a large-scale context.* Invited presentation given at the Seminar for Guy's and St Thomas's Child Development team, Evelina Children's Hospital, London.

Pellicano, E. (2011, May). *Disrupted perceptual adaptation in autism: A working hypothesis.* Invited presentation given at the Seminar for the Department of Psychology, Royal Holloway, London.

Pellicano, E. (2011, June). *Perceptual adaptation in autism.* Invited presentation given at the Workshop on 'Autism: Animal and Human Developments', Istituto di Neuroscienze CNR, Pisa, Italy.

Pellicano, E. (2011, July). *Testing cognitive theories of autism: Lessons from large-scale search.* Invited presentation given at the Educational Psychology (Autism Special Interest Group) Conference, Institute of Education, London.

Pellicano, E. (2011, September). *The development of core cognitive functions in children with autism spectrum conditions.* Invited presentation given at the Distance Education course on Autism, School of Education, University of Birmingham, Birmingham, UK.

Pellicano, E. (2011, October). *Bridging autism, science and society in the UK.* Invited presentation given at the US National Institutes of Health (NIH) and the Intragency Coordinating Committee (IACC) workshop on the Ethical, Legal and Social Implications of Autism Research, Bethesda, USA.

Pellicano, E. (2011, November). *Community participation in autism research.* Invited presentation given at the Autistic Self Advocacy Network (ASAN) Symposium on Ethical, Legal and Social Implications of Autism Research, Harvard Business School, Cambridge, USA.

Pellicano, E. (2011, November). *Autistic rights and autism research: Building a participatory framework.* Invited presentation given at the London Autism Rights Movement (LARM) Annual General Meeting, London.

Pellicano, E. (2011, November). *Testing cognitive theories of autism: Lessons from large-scale search.* Invited paper presented at the Speech and Language Therapy (SLT) Autism Special Interest Group (SIG) Conference, London.

Pellicano, E. (2011, November). *The development of core cognitive functions in children with autism spectrum conditions.* Invited presentation given at the One-day research-practice conference "Even-waardig: Autisme, theorie, and praktijk", Doorwerth, The Netherlands.

Zhou, P. (2011, December). *Parsing ambiguities: Children's pragmatic use of prosody in sentence processing.* Invited presentation given at the Tianjin Normal University, Tianjin, China.

# Other Colloquia and Presentations

Addis, D.R. (2011, August). *Age-related Neural Changes in Remembering and Imagining.* Colloquium at the Centre for Brain Research Seminar Series, The University of Auckland, Auckland, New Zealand.

Addis, D.R. (2011, September). *Imaging the Aging Brain.* Colloquium at the Aging and Neurodegeneration Theme Meeting, Neuroscience Research Australia, Sydney.

Addis, D.R. (2011, December). *Exploring the Human Brain.* Presentation given at the LENScience Bio-Med Summer School, Auckland, New Zealand.

Barnier, A. J. (2011, May). *Memory and ageing.* Presentation given at the Guest Lecture to the Gordon East Probus Club, Sydney.

Brock, J. (2011, November). *Biomarkers of autism spectrum disorders.* Presentation given at the ARC Centre for Cognition and its Disorders Annual Workshop, Sydney.

Brock, J. & De Lissa, P. (2011, February). *What can eye-movements reveal about cognition and its disorders?* Presentation given at the ARC Centre for Cognition and its Disorders Inaugural Workshop, Sydney.

Burrell, J.R., Vucic, S., Kiernan, M.C., & Hodges, J.R. (2011, May). *Motor dysfunction in Frontotemporal Dementia.* Presentation given at the Australian and New Zealand Association of Neurologists (ANZAN) Annual Scientific Meeting, Hobart, Australia.

Coltheart, M. (2011, April). *New ARC Centre of Excellence in Cognition & its Disorders.* Presentation given at the Cumberland Professorial Grand Rounds, Cumberland Hospital -Westmead, Sydney.

Croot, K. (2011, May). *Prosodic structure and tongue-twister errors*. Presentation given at the Macarthur Auditory Research Centre (MARCS), University of Western Sydney, Sydney.

Dalton, M. (2011, August). *Dementia research.* Presentation given at the Australian Rotary Health "Hat Day", University of New South Wales, Sydney.

Jeffery, L., Rhodes, G., McKone, E., Pellicano, E., Crookes, K., Taylor, E., & Read, A. (2011, November). *Insights into the development of face recognition mechanisms as revealed by face aftereffects.* Presentation given at the ARC Centre for Cognition and its Disorders Annual Workshop, Sydney.

Fieder, N., Nickels, L., & Biedermann, B. (2011, August). *Representation of mass and count nouns in the mental lexicon: Insights from mass/count errors in aphasia.* Presentation given at the Perspectives on Language Disorders Workshop, Sydney.

Fieder, N., Nickels, L., & Biedermann, B. (2011, September). *A single case study on mass and count noun processing in aphasia.* Presentation given at the Centre for Speech and Language Research, University College London, London.

Fieder, N., Nickels, L., & Biedermann, B. (2011, September). *The representation of mass/count nouns: Evidence from aphasia*. Presentation given at the Centre for Cognitive Neuroscience, University of Exeter, Exeter, UK.

Fieder, N., Nickels, L., & Biedermann, B. (2011, November). *The representation of countability information.* Presentation given at the Higher Degree Research Showcase, Macquarie University, Sydney.

Heersmink, R. (2011, July). Unifying and Improving Extension *Theory for the Philosophy of Human-Technology Relations.* Presentation given at the University of Twente, Enschede, The Netherlands.

Kloth, N. (2011, November). *Effects of facial attractiveness on eye gaze perception*. Presentation given at the ARC Centre of Excellence in Cognition and its Disorders Annual Workshop, Sydney.

Koelewijn, L. (2011, September). *MEG studies of gamma oscillations in early visual cortex: stimulus and attention-driven modulations.* Presentation given at the University College London Institute of Cognitive Neuroscience, London.

Koelewijn, L. (2011, September). *MEG studies of gamma oscillations in early visual cortex: stimulus and attention-driven modulations.* Presentation given at the Medical Research Council Cognition and Brain Sciences Unit, Cambridge University, Cambridge, UK.

Koelewijn, L. (2011, September). *MEG studies of gamma oscillations in early visual cortex: stimulus and attention-driven modulations.* Presentation given at the Neurosciences Research Institute, School of Life and Health Sciences, Aston University, Birmingham, UK.

Larsen, L., McArthur, G., Kohnen, S., Nickels, L., & Castles, A. (2011, November). *The Letter-Sound Test (LeST): Norms and children's learning of letter-sound rules.* Presentation given at the Sydney Postgraduate Psychology Conference, Sydney University, Sydney.

Mahajan, Y., & McArthur, G. (2011, May). *An introduction to event-related potentials.* Presentation given at the Centre for Reading and Language, University of York, York, UK.

Marsh, P. (2011, April). *Social Cognitive Remediation in Schizophrenia.* Presentation given at the Cumberland Professorial Grand Rounds, Cumberland Hospital - Westmead, Sydney.

Marsh, P. (2011, August). *Social Cognitive Remediation in Schizophrenia*. Presentation given at the Clinical Forum, Brisbane Metro South Health Service District, Brisbane.

Marsh, P. (2011, August). *Social Cognition: A new remediation program (SoCog.)* Presentation given at the Clinical Forum, Concord Hospital & Mental Health Centre, Sydney.

Marsh, P., Anandakumar, T. & Lee, B. (2011, September). *SoCog: A new remediation program.* Presentation given at the 12th NSW Early Psychosis Forum, Westmead Hospital, Sydney.

Miller, L. (2011, February). *Understanding Memory Processes and the Role of Memory Rehabilitation.* Invited presentation given at the ARC CCD Memory Node Meeting, NeuRa, Sydney.

Nickels, L. (2011, May). *Assessment and treatment of Developmental and Acquired Disorders of reading and spelling.* Presentation given at the professional development workshop for Speech Pathology Australia, Brisbane.

Temler, M., Barnier, A.J., Sutton, J., & McIlwain, D. (2011, July). *Social Contagion Without Contagion: The Effects of Social Cues, Personality and Culture on the Narrative Style and Accuracy of Memories of Unshared Personal Events.* Colloquium at the Centre on Autobiographical Memory Research (Con Amore), Aarhus University, Aarhus, Denmark.

Temler, M., Barnier, A.J., Sutton, J., & McIlwain, D. (2011, November). *The Impact of Audience and Personality on the Accuracy of Memories of Unshared Personal Events.* Presentation given at the Higher Degree Research Showcase, Macquarie University, Sydney.

Thornton, R. (2011, April). *Children's negative sentences in English and Mandarin.* Presentation given at the Child language workshop, Beijing Language and Culture University, Beijing, China.

Thornton, R. (2011, May). *Children's acquisition of negative sentences.* Presentation given at the Linguistics Department Seminar Series, Macquarie University, Sydney.

Thornton, R. (2011, August). *Acquiring sentential negation in child English.* Presentation given at the Harvard-Australia Workshop on Language Learning and Logic, Sydney.

Thornton, R. (2011, November). *Studies of negation in children with Specific Language Impairment.* Presentation given at the ARC Centre for Cognition and its Disorders Annual Workshop, Macquarie University, Sydney.

Woolgar, A. (2011, June). *Flexible representation of task-relevant information in frontoparietal cortex.* Presentation given at the Medical Research Council Cognition and Brain Sciences Unit Lunch Time Seminar Series, Cambridge, UK.

# MEDIA + *Publicity*

## Print

*Early action the key to cure a stutter*
**Dr Elisabeth Harrison**
2 February 2011, West Australian

*Thinking about cognition*
**Distinguished Professor Stephen Crain**
16 February 2011, Northern District Times

*Face facts*
**Dr Romina Palermo**
February 2011, Women's Health Magazine

*Scientist Profile*
**Dr Donna Rose Addis**
February 2011, Newsletter of the Association for Women in the Sciences, New Zealand

*Profiling Excellence*
**Dr Donna Rose Addis**
March 2011, Royal Society of New Zealand

*Hard to keep eyes on the prize*
**Distinguished Professor Stephen Crain**
3 April 2011, The Sun Herald

*The good god guide. Tentatively, scientists are asking: exactly what is religion, and what is it for?*
**Dr Ryan McKay**
20 April 2011, The Economist, UK
http://www.economist.com/node/18584074

*Evolved cognitive biases*
**Dr Ryan McKay**
22 April 2011, The Economist Online
http://www.economist.com/blogs/multimedia/2011/04/explaining_religion

*Scientist Profile in Top Ten Influencers 2011*
**Dr Donna Rose Addis**
July 2011, Unlimited Magazine, New Zealand

*Speak for yourself*
**Associate Professor Blake Johnson**
20 August 2011, Sydney Morning Herald/Brisbane Times

*Got this tune in my head, behind my right ear*
**Dr Olivier Piguet**
23 August 2011, Sydney Morning Herald

*Waltzing Matilda highlights unique dementia*
**Professor John Hodges**
23 August 2011, ABC Science

*Alzheimer's clue homes in on musical memory*
**Dr Olivier Piguet**
31 August 2011, New Scientist Magazine'
http://www.newscientist.com/ article/dn20847-alzheimers-clue-homes-in-on-musical-memory.html

*In search of little talkers*
**Professor Katherine Demuth**
10 November 2011, Northern District Times

*Engaging Chinese Media Program*
**Distinguished Professor Stephen Crain**
23 November 2011, Sing Tao Daily, China

*Some wasps learn never to forget a face*
**Dr Romina Palermo**
2 December 2011, ABC Science Online
http://www.abc.net.au/science/articles/2011/12/02/3381376.htm

*Search is on for little talkers*
**Dr Nan Xu and Kiri Mealings**
7 December 2011, Northern District Times

**Search is on for little talkers**

**UNI RESEARCH ON SPEECH**

Robert Kennard

MACQUARIE University is developing world leading research into child language development, but it needs the help of local families.

Post doctoral research fellow Nan Xu says the clinic has already seen about 60 children this year, but needs hundreds more to develop clearer results.

"We are wanting to make a call out to any mothers with two to three year old children who are developing without speech, vision or language impairments and are English speaking," Ms Xu said.

"This is so we can better identify problems in language development with other children."

Running for almost a year, the university's Child Language Lab is currently testing two and three-year-olds in a series of tests studies related to children's speech, repetition and perception.

They receive simple music and sound recognition tests to establish a control that is based on neurotypical or "normal" language development.

The results will then be used to compare against children with hearing, vision or speech impairment.

Rachel Owens, mother of 26-month-old Bronwen, took her daughter to the testing because she saw the flyers around the university.

"I thought it would be right up (Bronwen's) alley, she loves talking and she is quite cheeky," Ms Owens said.

Macquarie University honours student Kim Mealings with Bronwen Welsh in the child language laboratory. Picture: BRENT MITCHELMORE

GET INVOLVED

- Is your child 2 to 3-and-a-half years of age?
- Are your child's language and hearing abilities developing normally?
- Is Australian English the primary language spoken in your home?
- If you answer is yes, your child is eligible to participate in current studies at the Child Language Lab, and for completing the test, there is a $20 Coles/Myer card and a t shirt for your child.
- For details, 9850 9652 or linguil@mq.edu.au

*Northern District Times 7 December*

## Television

*Interview*
**Distinguished Professor Stephen Crain**
1 February 2011, ABC News

*Dr Donna Rose Addis*

*Live interview*
**Dr Donna Rose Addis**
3 August 2011, BBC Newsnight, UK

*Eureka Science Awards*
**Dr Anina Rich**
11 August 2011, Catalyst

*Stuttering*
**Dr Paul Sowman and Associate Professor Blake Johnson**
1 September 2011, Catalyst
http://www.abc.net.au/catalyst/vodcast/

## Film | Documentaries

*Through the Wormhole with Morgan Freeman*
**Dr Donna Rose Addis**
http://science.discovery.com/tv/through-the-wormhole/
September 2011, Discovery Science Channel

*Through the Wormhole with Morgan Freeman*
**Professor Gillian Rhodes**
http://science.discovery.com/tv/through-the-wormhole/
September 2011, Discovery Science Channel

## Radio

*Life Matters*
**Dr Elisabeth Harrison and Dr Paul Sowman**
27 January 2011, ABC National Radio, Canberra

*Universality of facial expressions*
**Dr Romina Palermo**
5 April 2011, ABC National Radio, Adelaide

*ABC News Interview*
**Professor Katherine Demuth**
20 June 2011, ABC National Radio, Sydney

*Foreign Accent Syndrome*
**Associate Professor Lyndsey Nickels**
3 June 2011, ABC National Radio, Brisbane

*Foreign Accent Syndrome*
**Associate Professor Lyndsey Nickels**
7 June 2011, ABC National Radio, Canberra

*Noam Chomsky wins Sydney Peace Prize*
**Emeritus Professor Noam Chomsky**
2 November 2011, Late Night Live, ABC National Radio
http://www.abc.net.au/rn/latenightlive/stories/2011/3353704.htm

*Easy as A – B – C – or is it?*
**Professor Stanislas Dehaene**
11 December 2011, Sundays with James O'Loghlin, ABC National Radio
http://blogs.abc.net.au/localradio/2011/12/easy-as-a-b-c-or-is-it-.html

*Life Matters*
**Dr Elisabeth Harrison and Dr Paul Sowman**
20 December 2011, ABC National Radio, Canberra

## Online Resources

*Cracking the enigma: an autism research blog*
http://crackingtheenigma.blogspot.com.au

*Macquarie Online Test Interface*
http://www.motif.org.au/

*Prosopagnosia Research*
http://www.maccs.mq.edu.au/research/projects/prosopagnosia/

*Synaesthesia Research*
http://www.maccs.mq.edu.au/research/projects/synaesthesia/

*Western Australia Register for Autism Spectrum Disorders*
http://www.autismwa.org.au/

# AWARDS, RECOGNITION + *Grants*

## Media Releases

*Launch of new ARC Centre of Excellence will benefit those with brain and cognitive disorders*
24 January 2011, Macquarie University

*Macquarie scores top marks in science*
1 February 2011, Macquarie University

*'Motherese' important for children's language development*
**Professor Katherine Demuth**
6 May 2011, Macquarie University

*International researchers convene to discuss language, learning and logic*
17 August 2011, Macquarie University

*Revealing the brain's secrets – public lecture on how the brain learns to read*
**Professor Stanislas Dehaene**
21 November 2011, Macquarie University

*Upcoming conference brings together world experts in cognitive science*
6 December 2011, Macquarie University

## Other Publicity

*The King's Speech – Movies at Macquarie*
**Dr Elisabeth Harrison and Dr Paul Sowman**
14 August 2011, Macquarie University

*Dementia researcher part of a new research generation at Macquarie*
**Vince Oxenham**
6 September 2011, Macquarie Globe

*Inception – Movies at Macquarie*
**Dr Doris McIlwain and Professor John Sutton**
18 September 2011, Macquarie University

*Working with kids or animals*
**Professor Katherine Demuth**
12 October 2011, Macquarie University Staff News

*Are you a synaesthete?*
**Dr Anina Rich**
1 December 2011, Macquarie University Quest Magazine

working with KIDS or animals

*Macquarie University Staff News, 12 October*

## Awards

**Associate Professor Amanda Barnier**
Vice-Chancellor's Award for Excellence in Higher Degree Research Supervision
Faculty of Human Sciences Excellence in Higher Degree Research Supervision Award, Macquarie University

**Elisabeth (Lisi) Beyersmann**
Macquarie University Research Award for Excellence in Higher Degree Research - Social Sciences, Business and Humanities

**Michael Connors**
Finalist, Macquarie University Research Award for Excellence in Higher Degree Research – Social Sciences, Business and Humanities

**Peter de Lissa**
Finalist, Macquarie University Research Award for Excellence in Higher Degree Research - Science and Engineering

**Richard Heersmink**
Best extended abstract, International Association of Computing and Philosophy Conference, Denmark

**Vince Polito**
People's choice award, Faculty of Human Sciences Three Minute Thesis (3MT) "Agency & Hypnosis", Macquarie University
Faculty of Human Sciences Higher Degree Research Excellence Award, Macquarie University

**Genevieve Quek**
Best PhD presentation award, Australasian Cognitive Neurosciences Conference
Student prize, 38th Australasian Experimental Psychology Conference

**Dr Anina Rich**
Finalist, Australian Museum Eureka Prizes People's Choice Award

**Dr Paul Sowman**
Finalist, Macquarie University Research Awards Early Career Researcher of the Year

**Jordan Taylor**
Faculty of Human Sciences Higher Degree Research Excellence Award, Macquarie University

**Associate Professor Rosalind Thornton**
Best Unit for Language: Its Structure and Use (LING 110), Department of Linguistics Student-Nominated Teaching Award, Macquarie University

**Astrid Zeman**
Best student poster, European Conference on Visual Perception, Toulouse, France

**Regine Zopf**
Faculty of Human Sciences Higher Degree Research Excellence Award, Macquarie University

## Appointments and Promotions

**Professor Max Coltheart**
Inaugural Visiting Fellow, Centre for Mind, Brain and Cognitive Evolution, Ruhr University.

**Dr Blake Johnson**
Promotion to Associate Professor

**Dr Saskia Kohnen**
Promotion to Lecturer (Level B)

**Dr Paul Sowman**
Promotion to Lecturer (Level B)

**Dr Britta Biedermann**
Promotion to Lecturer (Level B)

# Editorial Appointments

**Associate Professor Amanda Barnier**

Editorial Board, International Journal of Clinical and Experimental Hypnosis. (1998 continuing)

Associate Editor, Australian Journal of Clinical and Experimental Hypnosis. (2004 continuing)

Editor, Memory Studies. (2006 continuing)

**Professor Anne Castles**

Editorial Board, Scientific Studies of Reading. (2002 continuing)

Editorial Board, European Journal of Cognitive Psychology. (2006 continuing)

Associate Editor, Journal of Research in Reading. (2006 continuing)

Associate Editor, Cognitive Neuropsychology.

Editorial Board, Public Library of Science (PLoS) - One.

**Associate Professor Veronika Coltheart**
Consulting Editor, Journal of Experimental Psychology. (2002 continuing)

**Distinguished Professor Stephen Crain**

Editorial Board, Cambridge University Press, Linguistics Series. (2004 continuing)

Editorial Board, Journal of Child Language. (2005 continuing)

Editorial Board, Biolinguistics. (2006 continuing)

Editorial Board, Semantics and Pragmatics. (2008 continuing)

**Professor John Hodges**
Editorial Board, Cognitive Neuropsychiatry. (1997 continuing)

Editorial Board, Aphasiology. (2000 continuing)

Editorial Board, Cognitive Neuropsychology. (2002 continuing)

Editorial Board, Nature Clinical Practice Neurology. (2005 continuing)

Associate Editor, Journal of Alzheimer's Disease. (2010 continuing)

Editorial Board, Acta Neuropsychologica. (2011 continuing)

Asian/Pacific Editor for the Editorial Board, Acta Neuropsychologica. (2011)

**Professor Mark Johnson**
Editorial Board, Computer Speech and Language. (2009 continuing)

Editorial advisor, Computational Linguistics. (2009 continuing)

**Associate Professor Sachiko Kinoshita**
Associate Editor, Quarterly Journal of Experimental Psychology. (2005 continuing)

Consulting editor, Journal of Experimental Psychology: Learning, Memory & Cognition. (2006 continuing)

Consulting Editor, Journal of Memory and Language. (2010 continuing)

**Associate Professor Genevieve McArthur**
Editorial Board, Scientific Studies of Reading. (2009 continuing)

Academic Editor, PLoS-One. (2011 continuing)

**Professor Lyndsey Nickels**
Associate Editor, Aphasiology. (2003 continuing)

Editorial Board, Journal of Neurolinguistics. (2006 continuing)

**Professor Gillian Rhodes**
International Advisor, Wiley Interdisciplinary Reviews: Cognitive Science. (2008 continuing)

Advisory Committee, International Association for the Study of Attention and Performance. (2011 continuing)

**Professor John Sutton**
Editorial Board, Scan: journal of media arts culture. (2004 continuing)

Editorial Board, New Directions in Philosophy and Cognitive Science (Palgrave series). (2005 continuing)

Co-Editor, Memory Studies (Sage). (2006 continuing)

Editorial Board, Philosophical Psychology. (2006 continuing)

Editorial Board, Neuroethics. (2008 continuing)

Editorial Board, The Fibreculture Journal. (2008 continuing)

Co-Editor, Memory Studies (Palgrave Macmillan book series). (2009 continuing)

**Associate Professor Mark Williams**
Academic Editor, PLoS-One. (2009 continuing)

**Dr Peng Zhou**
Editorial Board member, Journal of Psycholinguistic Research. (2009 continuing)

Editorial Board member, International Journal of English Linguistics. (2011 continuing)



# External Research Grants

Alfred Kordelin Foundation via the Foundations' Postdoc Pool (2011 - 2012) "Grant for post-doctoral research abroad. (€35,000)." Renvall, K.

Alfred Kordelin Foundation via the Foundations' Postdoc Pool (2010 - 2011) "Grant for post-doctoral research abroad (€44,000)." Renvall, K.

Alzheimer's Australia Research Dementia Research Grants (2011 - 2012) "The future looks bright – Episodic future thinking as a diagnostic aid in frontotemporal dementia and Alzheimer's Disease." Irish, M., Piguet, O., & Hodges, J.R. ($33,000)

ARC Centre of Excellence [CE110001021] (2011 - 2017) "ARC Centre of Excellence in Cognition and its Disorders." Crain, S., Rhodes, G., Hodges, J., Coltheart, M., Castles, A., Barnier, A., Brock, J., Byrne, B., Demuth, K., Green, M., Langdon, R., Johnson, B., McArthur, G., Miller, L., Nickels, L., Piguet, O., Savage, G., Thompson, W., Thornton, R. et al. ($21,000,000)

ARC Discovery Project Grant (2010 - 2014) "The emergence of logic in human language." Crain, S., Johnson, B., Khlentzos, D., Lee, T.H.-T., Tseng, O., & Gao, L.-Q. ($601,000)

ARC Discovery Project Grant (2011 - 2014) "Speech production in language-impaired speakers: Informing theoretical models and clinical practice regarding grammatical processing." Biedermann, B., & Schiller, N. ($401,509)

ARC Discovery Project Grant (2011 - 2013) "Using generalisation to better treat poor spelling." Kohnen, S., Nickels, L., & Rapp, B. ($240,000)

ARC Discovery Project Grant [DP110102479] (2011 - 2013) "Phonological effects on the development of inflectional morphology." Cox, F., & Shattuck-Hufnagel, S. ($205,000)

ARC Discovery Project Grant [DP110102506] (2011 - 2013) "Computational models of synergies in human language acquisition." Johnson, M., Demuth, K., & Frank, M. ($368,000)

ARC Discovery Project [DP110104202] (2011 - 2015) "Make up your mind! - Dissociating the roles of orbitofrontal cortex and striatum in human decision making". Hornberger, M., Hodges, J., & Lewis, S. ($1,005,000)

ARC Discovery Project Grant (2011 - 2014) "Perceptual and psychosocial factors associated with individual differences in face identity and face expression processing". McKone, E., Palermo, R., O'Kearney, R., & Moore, T. ($414,000)

ARC Discovery Project Grant (2009 - 2013) "How does the brain process facial expressions?" Williams, M.A. ($609,610)

ARC Discovery Project Grant (2009 - 2014) "Integrating holistic processing and face-space approaches to the perception of facial identity." McKone, E., Edwards, M., & Aimola Davies, A. ($495,000)

ARC Discovery Project Grant (2009 - 2013) "Cognitive and neural cause of language impairment in autism." Brock, J., Johnson, B., & McArthur, G. ($422,285)

ARC Discovery Project Grant (2009 - 2011) "Keeping track: The effect of distraction on attention to moving objects." Rich, A., & Horowitz, T. ($353,000)

ARC Discovery Project Grant (2009 - 2012) "Vocal Emotional Communication." Thompson, W.F., & Palmer, C. ($295,000)

ARC Discovery Project Grant (2009 - 2011) "A new theory of visual word recognition and reading aloud." Coltheart, M. ($282,000)

ARC Discovery Project Grant (2009 - 2011) "Learning to read words: Beyond alphabetic skills." Castles, A., & Nation, K. ($200,000)

ARC Discovery Project Grant (2009 - 2011) "The human face as an evolved signalling system." Burke, D., Palermo, R., Williams, M.A., & Favelle, S. ($185,000)

ARC Discovery Project Grant (2008 - 2011) "The meaning of 'OR' in logic and human languages". Thornton, R. ($287,000)

ARC Discovery Project Grant [DP1093279] (2010 - 2012) "Prefrontal and medial temporal lobe cortices' interactions to episodic long-term memory". Piguet, O., Hodges, J., & Hornberger, M. ($327,000)

ARC Discovery Project Grant [DP110100294] (2011 - 2013) "Cracking the orthographic code: Early perceptual processes in reading." Kinoshita, S., & Norris, D. ($325,601)

ARC Discovery Project Grant [DP110102593] (2011 - 2013) "Incremental syntactic parsing and coreference resolution." Johnson, M.E., & Steedman, M. ($395,000)

ARC Discovery Project Grant [DP110102589] (2011 - 2013) "Gaze perception and adaptation." Clifford, C.W., & Calder, A.J. ($284,000)

ARC Discovery Project Grant and Australian Professorial Fellowship (2008 - 2012) Rhodes, G., Pellicano, E., & Leopold, D.A. ($739,500)

ARC Discovery Project Grant and Australian Research Fellowship (2008 - 2012) "Attention, Intention and Automaticity". Finkbeiner, M. ($465,000)

ARC Discovery Project Grant and Australian Research Fellowship (2008 - 2012) "Children's difficulties in learning to read: Causes and consequences of poor letter-sound knowledge". McArthur, G., Coltheart, M., & Castles, A. ($454,000)

ARC Discovery Project Grant and Australian Research Fellowship (2007 - 2011) "From autobiographical memory to collective memory: An interdisciplinary study of individual and group cognition." Barnier, A., & Sutton, J. ($410,000)

ARC Federation Fellowship [FF0776229] (2007 - 2012) "Long-term memory systems and the human brain". Hodges, J. ($2,004,000)

ARC Future Fellowship (2011 - 2014) "Poor social functioning in schizophrenia: Understanding its causes and developing better treatment." Langdon, R. ($674,019)

ARC Linkage Project (2011 - 2013) "Examination of the cognitive and biological circuitry underlying social-cognitive training in first episode psychosis." Guastella, A., Langdon, R., Scott, E., Ward, P., Naismith, S., & Redoblado-Hodge, A. ($294,000)

Australian Government Department of Education, Science and Training Co-operative Research Centres Programme (2006 - 2012). " The HEARing Co-operative Research Centre." Core participants: The University of Melbourne, Cochlear Ltd., Siemens Hearing Instruments Pty Ltd, Australian Hearing, Macquarie University. Crain, S. ($32,550,000)

Australian Rotary Health Research Fund (2009 - 2011) "Remediation of mental-state reasoning and emotion recognition in schizophrenia: Theoretical and clinical implications." Marsh, P., Langdon, R., & Coltheart, M. ($14,000)

Biotechnology and Biological Sciences Research Council (2010 - 2015) (£4,999,009) "Systems cognitive neuroscience of healthy ageing: population-representative studies of functional plasticity and neural change." Tyler, L., Brayne, C., Bullmore, E., Calder, A.J., Cusack, R., Duncan, J., Henson, R., Marslen-Wilson, W., Mathews, F., & Rowe, J.

Bloomsbury Colleges PhD Studentship (2011 - 2014) "Mechanisms of social influence in typical development and autism." (£57,000) Pellicano, E., & Bird, G.

Department of Education Autism Education Trust (2011) "What is good practice in autism education?" Pellicano, E., Charman, T., & Dockrell, J.

Department of Education Autism Education Trust (2011) "Planning meaningful outcomes for children and young people on the autism spectrum." Pellicano, E., Wittemeyer, K., Guldberg, K., Macnab, N., Charman, T., Parsons, S., Howlin, P., Slonims, V., Hastings, R., & Cusack, J.

Hong Kong Research Grants Council General Research Fund (2011 - 2014) "Understanding the basis for the own-race advantage in face recognition." Hayward, W., Caldara, R., & Rhodes, G. ($123,977)

National Institute of Health/National Institute of Child Health & Human Development (2006 - 2012) "Longitudinal Twin Study of Early Reading Development." Olson, R.K. & Byrne, B. ($1,500,000)

National Social Science Foundation Grant of China (2009 - 2011) "Semantic acquisition in Chinese and English: A Cross-linguistic comparison of children's understanding of logical words. " Gao, L.Q., Crain, S., Thornton, R., Lee, T. H.-T., Huang, Y. Y., Yang, S. Y., & Zhou, P. ($13,000)

Medical Research Council (2009 - 2014) (£2,370,000) "Interactive Neural systems governing emotion and social interaction." Calder, A.J.

NHMRC Centre for Clinical Research Excellence (2009 - 2013) "Centre for Clinical Research Excellence in Aphasia Rehabilitation." Worrall, L., Togher, L., Ferguson, A., Copland, D., Nickels, L., & Douglas, J. ($499,000)

NHMRC Postdoctoral Training Fellowship (2009 - 2012) "Cortical networks that integrate auditory input and speech motor output in human stutterers." Sowman, P. ($285,000)

NHMRC Project Grant (2010 - 2011) "The effects of Oxytocin on social cognition in schizophrenia." Guastella, A., Langdon, R., Redablodo-Hodge, A., Ward, P., & Scott, E. ($182,000)

NHMRC Project Grant (2009 - 2013) "Neurocognitive correlates of transition from ultra-high risk mental state to schizophrenia." Schall, U.A., Michie, P.T., Stain, H.J., Ward, F.B., Langdon, R., & Todd, J. ($1,505,750)

NHMRC Project Grant (2009 - 2011) "Neurocognitive studies of brain plasticity associated with surgical treatment of arteriovenous malformations." Savage, G., Morgan, M.K., Williams, M.A., Rich, A., Maruff, P.T., & Baker, C.I. ($674,500)

NHMRC Project Grant (2009 - 2013) "Understanding emerging severe mental illness in young people." Schall U, Michie, P, Stain, H, Ward, P, Langdon, R., & Todd, J. ($1,540,000)

NHMRC Project Grant (2008 - 2012) "A randomised control trial of treatments for children with different types of reading difficulty." McArthur, G., Coltheart, M., Castles, A., & Kohnen, S. ($840,000)

NHMRC Project Grant [1003139] (2011 - 2013) "Eating disturbance and hypothalamic function in frontotemporal dementia." Piguet, O., Samaras, K., & Hodges, J. ($475,000)

NHMRC Project Grant [630489] (2010 - 2012) "Progressive aphasia and amyloid deposition: a multidisciplinary approach to improving dementia diagnosis." Hodges, J., Rowe, C., Piguet, O., Pike, K., Ballard, K., & Villemagne, V. ($510,700)

NHMRC Project Grant [632689] (2010 - 2012) "The impact of circadian disturbances on sleep quality, cognition and psychiatric symptoms in neurodegenerative disease." Lewis, S., Naismith, S., Rogers, N., & Hodges, J. ($479,000)

NHMRC Project Grant [APP1003760] (2011 - 2013) "Brain dynamics and sensorimotor integration associated with speech production in humans who stutter." Sowman, P., Johnson, B., Harrison, E., & Crain, S. ($294,884)

NHMRC Research Fellowship (2006 - 2011) "Senior Research Fellow, Level A." Nickels, L.A. ($362,250)

NICHD R01 HD057606 (2008 - 2013) "Constraints on phonological and morphological development. " Demuth, K., & Shattuck-Hufnagel, S. ($1,595,024)

NSF PIRE international training program in computational linguistics (2009 - 2014) "Collaborative investigation of meaning representation in language processing." Johnson, M. & Charniak, E. ($1,064,990)

NSW Office for Science & Medical Research Life Sciences Award (2007 - 2011) Hodges, J. ($400,000)

Nuffield Foundation Social Science Small Grant Scheme (2011) "Number sense in autism." Pellicano, E., & Burr, D.

NWO Rubicon Grant (2010 - 2012) "How do children learn to read? Understanding the dynamics between building up orthographic representations and lexical restructuring." Marinus, E. ($85,000)

St. John's College Research Centre Grant (2011 - 2012) "Eye movements in literary reading." Nation, K.

The Economic and Social Research Council (2011 - 2013) "Discourse processing in poor comprehenders: an eye movement study." Nation, K., & Joseph, H.

The Economic and Social Research Council quota award (2010 - 2013) "Probing the sensory atypicalities in autism." Pellicano, E.

The Cambridge BioResource, Medical Research Council, Sir Cusrow Wadia Fund (2009 - 2013) (£197,751) "Facilitating Human Gene-Phenotype-Function Research in Cambridge." Marslen-Wilson, W., Calder, A.J., Todd, J., Ouwehand, W., Wareham, N., O'Rahilly, S., Dunger, D., & Savage, D.

U.S. National Institutes of Health (2007 - 2012) "Longitudinal outcomes of children with hearing impairment: early vs later intervention." Ching, T.Y.C., Cupples, L., Dahl, H., & Dillon, H.

VolkswagenStiftung (2010 - 2013) "Social conformity: why do humans and monkeys make weak decisions under social influence." (€398,000) Pellicano, E., Krug, K., & Mojzisch, A.

## Internal Research Grants

Faculty of Human Sciences International Visiting Research Fellowship (2011) for the visit of Dr Christopher Chambers. Sowman, P. ($6,000)

Macquarie University New Staff Grant Scheme (2011) "Treating poor reading fluency: the effect of syllable training." Marinus, E. ($19,384

Macquarie University Research Centres Scheme (2007 - 2011) "Centre for Language Sciences." Crain, S., Peters, P., Cupples, L., Johnston, T.A., Nickels, L., McMahon, C., & Thornton, R. ($150,000)

Macquarie University Research Development Grant (2009 - 2011) "Investigating Brain Anomalies in Stuttering With Transcranial Magnetic Stimulation." Sowman, P.F. & Johnson B.W. ($46,025)

Macquarie University Research Development Grant (2011 - 2013) "'Boring' or 'interesting': How do we process adjectives after brain damage?" Renvall, K., Burianova, H., & Nickels, L. ($45,998)

Macquarie University Research Fellowship (MQRF) (2011 - 2013) "Using generalisation to improve treatment of spelling difficulties." Kohnen, S. ($270,641)

Macquarie University Research Infrastructure Block Grant (2011) "Eye monitoring & tactile stimulators for a magnetic resonance imaging environment." Rich, A.N., Graham, S., Williams, M.A., Morgan, M., Savage, G., Burianova, H., Magnussen, J., Finkbeiner, M., Marsh, P., & Rowe, D. ($50,000)

Macquarie University Safety Net Grant (2011) "Processing the world around us: How is task-relevant information represented in the brain?" Rich, A.N. & Woolgar, A. ($25,000)

Macquarie University Safety Net Grant (2011) "When and how does remembering with others help memory." Barnier, A. ($25,000)

Macquarie University Strategic Infrastructure Scheme/NHMRC Equipment grant (2011) "TMS Manager; real-time TMS navigation system. " Sowman, P. ($16,000)



# INCOME + *Expenditure*

| INCOME | |
|---|---|
| ARC Centre of Excellence Grant | $3,047,251 |
| Cash Contributions by Node | |
| Macquarie University | $750,535 |
| University of New South Wales | $150,000 |
| University of Western Australia | $197,581 |
| NSW Science Leveraging Fund | $511,579 |
| **TOTAL INCOME** | **$4,656,946** |

| EXPENDITURE | |
|---|---|
| Salaries | $1,830,699 |
| Equipment | $295,387 |
| Travel | $190,836 |
| Maintenance/Consumables | $165,195 |
| Other Expenditure | $112,192 |
| **TOTAL EXPENDITURE** | **$2,594,309** |
| Accumulated funds at the end of 2011 | $2,062,637 |

# PERFORMANCE *Indicators*

## Research Findings

| PERFORMANCE MEASURE | | TARGET | OUTCOME |
|---|---|---|---|
| Number of research outputs | | | |
| | Books | 2 | 3 |
| | Book Chapters | 20 | 20 |
| | Journal Articles | 75 | 187 |
| | Conference abstracts/papers | 30 | 11 |
| Quality of journal articles (IF > 2) | | 30 | 91 |
| Keynote and invited presentations at major meetings | | 15 | 20 |
| Commentaries about Centre achievements | | | |
| | Media Releases | 10 | 11 |
| | Articles | 10 | 30 |
| Web of Science citations for: Castles, Crain, Coltheart, Hodges, Rhodes | | 200 | 3,572 |

## Research Research Training + Professional Education

| PERFORMANCE MEASURE | TARGET | OUTCOME |
|---|---|---|
| Training sessions organised by the Centre | 15 | 14 |
| Number of attendees at Centre training sessions | 57 | ~85 |
| New postgraduate students | 10 | 20 |
| New postdoctoral researchers | 10 | 15 |
| New honours students | 10 | 15 |
| Postgraduate completions, completion times | 8, 3yr 6mth | 8, 4yr 1mth |
| Number of Early Career Researchers (within 5 years of PhD) | 17 | 20 |
| Mentored high school and visiting students | 7 | 24 |

## International, National and Regional Links + Networks

| PERFORMANCE MEASURE | | TARGET | OUTCOME |
|---|---|---|---|
| International visitors | | 18 | 59 |
| National and international workshops organised by the Centre | | 5 | 10 |
| Visits to overseas laboratories | | 30 | 33 |
| Interdisciplinary research supported by the Centre | | | |
| | Cross-program experiments/papers | 5 | 8 |
| | Cross-program/interdisciplinary PhD supervisors | 20% | 25% |

## National Benefit

| PERFORMANCE MEASURE | TARGET | OUTCOME |
|---|---|---|
| Contribution to the National Research Priorities and the National Innovation Priorities | 6 | Contributed to: A healthy start to life: Reading, Language and Person Perception Programs; Ageing well, ageing productively: Memory, Belief Formation and Language Programs |



## End-user Links

| PERFORMANCE MEASURE | | TARGET | OUTCOME |
|---|---|---|---|
| Government, industry and business briefings | | 5 | 13 |
| Public awareness programs | | 3 | 3: Year 10 work experience students, Regional University Workshop (UNE), Website |
| Website | | | |
| | Events | 12 | > 12 |
| | Research outcomes | 4 | > 4 |
| | Website hits | 10,000 | Monitoring starts 25/1/12 |
| Public talks given by the Centre | | 10-15 | 14 |

## Organisational Support

| PERFORMANCE MEASURE | TARGET | OUTCOME |
|---|---|---|
| Total annual cash contributions from Collaborating Organisations | $1,091,227 | $1,091,227 |
| Total annual in-kind contributions from Collaborating Organisations | $1,137,970 | $1,137,970 |
| Total annual cash contributions from Partner Organisations | $0 | $0 |
| Total annual in-kinds contributions from Partner Organisations | $93,793 | $93,793 |
| Total annual other research income | $7,798,000 | $8,925,444 |
| New collaborations with institutions/industry | 3 | 3: CSIRO, McMaster, ANU |

## Governance

| PERFORMANCE MEASURE | | TARGET | OUTCOME |
|---|---|---|---|
| Breadth, balance and experience of advisory committees | | | |
| | Scientific Committee | 4 | 5: see Governance |
| | Advisory Board | 10 | 10: see Governance |
| Advisory Board meetings | | 2 | 2: 3 Feb & 17 Aug |
| Bringing researchers together to form an interactive and effective research team | | | |
| | Recruit (or retain) new staff and students across the five research programs | 37 | 60 |
| | Research Management Committee meetings | 1 | 4 meetings; plus Director and COO visited UWA node |

## Centre Performance Indicators

| PERFORMANCE MEASURE | TARGET | OUTCOME |
|---|---|---|
| Women in Science Program | Establish program and appoint academic coordinator | This program was refocused more broadly on cognitive science in the public interest, being developed by CI Byrne with support from the National Committee for Brain and Mind. |
| Educational Outreach Program | Establish program and appoint Director of Outreach and Education | CI Thornton was identified as the academic coordinator for the education outreach program. |
| | Annual recruitment high school interns | Work experience and volunteer interns were hosted by CCD CIs Barnier & Miller, & AIs Jeffery & Rich. AIs Palermo and Friedman gave presentations to Year 10 students about psychology and cognitive science. |
| Rural Outreach Program | Establish program and appoint Director of Outreach and Education | Director Crain was identified as the coordinator of this program, and Crain and COO Varvel and AI Khlentzos organised a UNE hosted workshop promoting cognitive science and ARC Centres of Excellence. Links with two new AIs at regional universities occurred: Jones and Antón-Mendez. |

# CONTACT *Information*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Australian Government
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