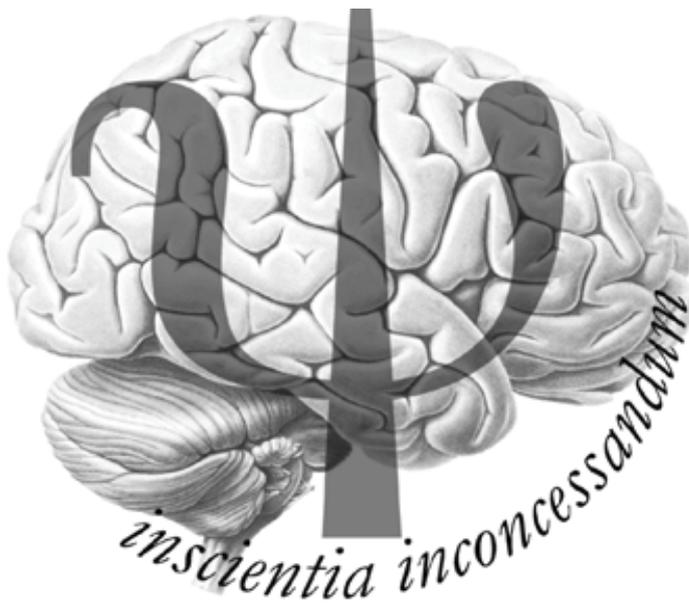


# PSYCOLLOQUY 2016

Department of Psychology  
University of Otago



24 November 2016  
Main Common Room  
University College



# *Welcome to Psycolloquy 2016*

## ***Waiata - Te Aroha***

*Te aroha  
Te whakapono  
Te rangimarie  
Tātou, tātou e*

*Love  
Faith  
Peace  
For us all*

# *Keynote Presenters*

*This year we are pleased to have Drs Mihi Ratima and Will Edwards give the keynote address titled*

## ***Researching with Māori: Opportunities for researchers and communities***

*The presenters will talk about maximising opportunities for researchers and communities to work together towards research excellence in Aotearoa/New Zealand in the 21st Century, taking advantage of this country's reputation as indigenous research leaders. They will describe what effective engagement with Māori communities looks like and provides for research. In addition, the presenters will challenge current thinking, drawing on practical examples from an ongoing research project, Te Kura Mai i Tawhiti – a collaboration between Te Pou Tiringa (a Taranaki Māori community body) and the Department of Psychology's National Centre for Lifecourse Research.*

*In addition, there will be presentations of research by students from within the Department of Psychology and a prize for the best student presentation.*

# Psych colloquy 2016 Committee

Dr Julien Gross

Dr Karen Tustin

## Special thanks to

Professor Michael Colombo

Cara Duffy

Sabrina Goh

Department of Psychology Technicians

# Psycholology 2016

8.00 am WELCOME

8.30 am BREAKFAST

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9.00 am ***Aroaro Tamati***

He Piki Raukura - Health and well-being through the lifecourse: An early life whānau development approach

9.15 am ***Emily Ware***

Children's perceptions of dentistry

9.30 am ***Wayne Meighan***

Investigating interoception in the MIA model of psychosis

9.45 am ***Catrona Anderson***

Neural correlates of memory in the nidopallium caudolaterale and nidopallium frontolaterale of pigeons (*Columba livia*)

10.00 am ***Saleh Moradi***

The role of ethical context as a moderator in the relation between flourishing and pro-social behaviours

10.15 am ***Tracy Cameron***

Growth modelling of emerging literacy skills – multilevel and growth mixture approaches

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10.30 am MORNING TEA

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11.00 am KEYNOTE ADDRESS

***Dr Will Edwards & Dr Mihi Ratima***

Researching with Māori: Opportunities for researchers and communities

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12.15 pm LUNCH

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2.00 pm **Jess Aitken**

Little Helpers: A longitudinal study of mental state language, self-concept and toddlers' progression from goal- to emotion-based helping

2.15 pm **Ben Riordan**

The Jekyll and Hyde of student drinking: Event specific drinking during Orientation Week and suggestions for intervention

2.30 pm **Suzanne Neumann**

The relationships among aberrant salience, reward motivation, and reward sensitivity

2.45 pm **Kimberley Wake**

To report or not to report: Does the decision to report a crime affect memory?

3.00 pm **Millie Johnston**

The role of the avian nidopallium caudolaterale in a four-item serial order task

3.15 pm **Ann Cronin**

Getting your hands dirty in Dunedin, the joy of creativity and problem solving

3.30 pm **Rebecca Harding**

You snooze you win: Good quality sleep is important for primary school children

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3.45 pm AFTERNOON TEA and STUDENT PRIZE PRESENTATION

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*We would like to thank the*

*Department of Psychology and Continuing Education for supporting  
the Department's presentation day for students' research*

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# KEYNOTE ADDRESS

## Researching with Māori: Opportunities for researchers and communities

*W. Edwards and M. Ratima*

*Taumata Associates / Te Pou Tiringa*

New Zealand health research funders expect that researchers are able to form partnership relationships with Māori communities. The high value attributed to Māori involvement in research is articulated in the Vision Mātauranga Policy, academic institutions' strategic policies and increasing participation of Māori in the research workforce. Māori communities' expectations also continue to evolve, with calls for power sharing and research outcomes to make a practical difference in community-defined priority areas, particularly addressing inequities shaping the daily lives of whānau.

Despite the changing environment, researchers often struggle to grasp the implications for their own research, asking - what do these changes mean for me? What does research with Māori look like? How do I start a conversation with Māori communities and work with them?

This presentation is about maximising opportunities for researchers and communities to work together towards research excellence in Aotearoa/New Zealand in the 21st Century, taking advantage of this Country's reputation as indigenous research leaders. We will describe what effective engagement with Māori communities looks like and provides for research. We will challenge current thinking, drawing on practical examples from an ongoing research project, Te Kura Mai i Tawhiti – a collaboration between Te Pou Tiringa (a Taranaki Māori community body) and the Department of Psychology's National Centre for Lifecourse Research.

# He Piki Raukura – Health and well-being through the lifecourse: An early life whānau development approach

**A. Tamati<sup>1</sup>, R. Poulton<sup>1</sup>, R. Theodore<sup>1</sup>, M. Ratima<sup>2</sup>, and G. Treharne<sup>1</sup>**

*<sup>1</sup>Department of Psychology, University of Otago*

*<sup>2</sup>Te Pou Tiringa*

National and international research strongly points to the importance of the early years, in terms of later health and wellbeing outcomes. However, little research has been done in this area in relation to Māori children and whānau and particularly the positive impact that early life kaupapa Māori programming may have on health and wellbeing outcomes throughout the lifecourse. The aim of this research project, He Piki Raukura, is to explore key elements of early life kaupapa Māori programming, in particular, a Taranaki kaupapa Māori early childhood programme, Te Kōpae Piripono, that acts as a ‘real world’ child and whānau intervention to support and reinforce positive behaviours among tamariki and their whānau. This will inform the exploration of Māori and Western behavioural constructs around which there is evidence and/or strong indications that these constructs are linked to positive health and well-being outcomes over time.

# Children's perceptions of dentistry

***E. B. Ware, J. Gross, and H. Hayne***

*Department of Psychology, University of Otago*

How do young children perceive dentistry? Very young children, children with disabilities, or children who have significant clinical problems can generate complications with engagement due to anxiety and communication difficulties. Psychological research has shown that drawing is an effective strategy for gaining accurate information from children, but, paediatric dentistry has yet to utilise drawing effectively in this capacity. The present study will compare the effectiveness of two techniques that are commonly used in clinical practice with children: 1) a tell interview, 2) a draw-and-tell interview. We hypothesise that children given the opportunity to draw will report more accurate and clinically-relevant information than children not given the opportunity to draw.

# Investigating interoception in the MIA model of psychosis

***W. Meighan, R. Ward, and D. Bilkey***

*Department of Psychology, University of Otago*

The aim was to establish an objective measure of 'subjective' experience in an animal model of psychosis. A key deficit within animal models of complex disorders such as schizophrenia, lies in the inability of animals to self-report symptoms, e.g., hallucinations and delusions. The Maternal Immune Activation (MIA) model has established deficits in GABAergic inhibitory circuits, the psychomimetic ketamine can produce the full spectrum of schizophrenic symptoms, both robust primers for psychosis in humans. Utilising a Drug Discrimination (two-lever operant chamber) paradigm, MIA and control rats were injected with either ketamine or saline, on a pseudo random schedule for fifty days. Through comparison of acquisition and discrimination rates, a measure of interoception was established. As hypothesised, the MIA rats displayed an impairment in the ability to discriminate the interoceptive ketamine cue, suggesting a basal 'subjective' state resembling that of schizophrenia.

# Neural correlates of memory in the nidopallium caudolaterale and nidopallium frontolaterale of pigeons (*Columba livia*)

**C. Anderson, M. Johnston, and M. Colombo**

*Department of Psychology, University of Otago*

Numerous studies have explored the neural basis of memory in nonhuman animals, and how neurons change their firing rate during a delay period when animals are presumably remembering information. Neurons that display such sustained delay activation are known as 'delay cells'. The pigeon nidopallium caudolaterale (NCL) is thought to be analogous to the primate prefrontal cortex (PFC), and in previous studies has been shown to be modulated by reward information over sample information. However, to the best of our knowledge, nobody has done a delayed-matching-to-sample (DMS) task that is not influenced by reward, such as in a common outcomes (CO) procedure.

Therefore, the first goal of the current study was to examine delay cells in the pigeon NCL, using a CO DMS task with red and green stimuli. The second goal was to examine the extent to which delay cells are represented across the avian brain by exploring a newly identified visual region in the avian brain, the nidopallium frontolaterale (NFL). In both areas we found a similar incidence of delay cells as in previous studies. In both NCL and NFL, we found that neural activity during the delay period differed significantly from baseline levels of activity. This suggests that these areas may be coding the sample stimulus, despite previous evidence indicating that NCL codes reward information. However, we argue that our results may reflect a more multimodal view of delay activity.

# The role of ethical context as a moderator in the relation between flourishing and pro-social behaviours

***S. Moradi<sup>1,3</sup>, N. Van Quaquebeke<sup>2</sup>, and J. A. Hunter<sup>3</sup>***

*<sup>1</sup>Network for Empowerment and Well-Being, Gothenburg, Sweden*

*<sup>2</sup>Kühne Logistics University, Hamburg, Germany*

*<sup>3</sup>Department of Psychology, University of Otago*

Flourishing is the pursuit of what seems intrinsically desirable to an individual, e.g., positive emotions, engagement, positive relationships, meaning and accomplishment. Numerous studies show that a flourishing life relates to a wide array of advantageous personal outcomes. The corresponding literature, however, says very little about the social outcomes of flourishing. With the present research, we seek to inform the respective debate. Specifically, we argue that flourishing, in its current conceptualisation, does not provide a strong moral guidance. As such, flourishing is agnostic when it comes to social outcomes. Drawing on social learning theory, however, we argue that flourishers' prosociality is contingent to ethicalness of the society they live in. To this end, Corruption Perception Index (CPI)—an indicator of the perceived levels of corruption based on expert opinion, which has been announced by Transparency International for each country since 2001—was utilised as a measure of ethicality in different countries. Accordingly, using the data from European Social Survey (ESS) which is collected from 29 countries in 2006 (N1 = 44718) and in 2012 (N2 = 56763), we tested the moderating role of CPI in the relation between flourishing and prosocial behaviours, i.e., helping others and charitable activities. Our findings generally support the idea that CPI moderates the relation between flourishing and the world around. The substantive interpretation is that flourishing has a bigger positive effect on prosocial behaviours for individuals who live in countries with higher CPI.

# Growth modelling of emerging literacy skills – multilevel and growth mixture approaches

***T. A. Cameron, M. Taumoepeau, and E. Schaughency***

*Department of Psychology, University of Otago*

We illustrate the use of multilevel modelling (MLM) and growth mixture modelling (GMM) approaches for understanding the typical developmental trajectory(ies) of children's early literacy skills during beginning schooling. MLM assumes that individuals come from a single population and that a single growth trajectory can adequately describe development, whereas GMM may be used to investigate the possibility of multiple growth trajectories. Ninety-nine children (n = 55 boys) in Year 0/1 were assessed bi-weekly for eight weeks on two tasks to monitor skill development related to emergent literacy. One task assessed onset phoneme awareness, First Sound Fluency (FSF); the other letter-sound correspondence, Letter-Sound Fluency (LSF). Initial MLM analyses indicated statistically significant growth on progress monitoring tasks over time; however, typically used demographic predictors (i.e., gender, ethnicity, school decile, and number of weeks in school) did not adequately explain the variations between the children's performance in initial scores or development over time. Therefore, a GMM approach was used to explore whether children's performance reflected multiple developmental trajectories. Three distinct patterns of performance (latent classes) were suggested for both early literacy tasks. The majority of children demonstrated task mastery during progress monitoring, termed typical (FSF: 77.6%; LSF: 65.8%). The remaining children exhibited lower initial performance on the tasks, with some then improving over the eight week period (FSF: 10.8%; LSF: 14.6%) whereas others displayed limited progress (FSF: 11.6%; LSF: 19.7%). For the current early literacy skill data, the GMM approach provided a better reflection of the variation in children's skill development than the MLM alone. Implications for developmental research and screening will be discussed.

# Little Helpers: A longitudinal study of mental state language, self-concept and toddlers' progression from goal- to emotion-based helping

*J. Aitken, T. Ruffman, and M. Taumoepeau*

*Department of Psychology, University of Otago*

Despite high interest in children's helping behaviour over recent decades, research has typically used cross-sectional designs to draw conclusions on the development of helping. The present study aims to examine the emergence of Instrumental (goal-based) and Empathic (emotion-based) helping behaviours as they emerge, and assess how self-recognition and language about mental states might influence this progression. Seventy-two children (14–25-months at T1) and their primary caregiver were assessed over four monthly sessions. Helping behaviour in three situations (Instrumental, Empathic-Pain, Empathic-Sadness), and parent and child mental state language was assessed at each timepoint, with self-concept assessed at Times 1 and 3. Using ordering-theoretic method, children's individual response patterns showed Instrumental helping to be a necessary precursor to Sadness-induced helping at Times 1, 2, and 4, and to Pain-induced helping at Times 1 and 4, with nonsignificant results showing a strong trend in the same direction. Sadness and Pain tasks were equivalent at all timepoints. Self-recognition was a necessary precursor to Pain helping at Time 3; all other patterns between self-recognition and Empathic (but not Instrumental) helping showed a trend in the same direction. These results provide tentative evidence that Instrumental helping is a necessary step in the development of Empathic helping, and that self-concept emerges before Empathic (but not Instrumental) helping develops. Further analyses will examine the impact the quantity and quality of parental mental state talk has on children's helping behaviour, and assess how child self-concept and mental state vocabulary influence this association. Using sequential longitudinal analysis, we will examine relations in helping behaviour, mental state language and self-recognition across the 12-month range of the participants.

# The Jekyll and Hyde of student drinking: Event specific drinking during Orientation Week and suggestions for intervention

***B. C. Riordan, T. S. Conner, J. A. M. Flett, and D. Scarf***

*Department of Psychology, University of Otago*

We often look at students' drinking using a 'typical week' measure. While this is a good starting point, a 'typical week' average can disguise risky drinking episodes, making it look like a student drinks like Dr Jekyll while disguising their Mr Hyde. One factor known to bring out Hyde is an event. Events in the academic calendar are associated with both increased alcohol use and alcohol-related harm. Previous research has predominantly focused on 21st birthday celebrations and Spring Break and often overlooks other common events such as Orientation Week (O'Week). In several studies we aimed to identify the impacts of student drinking during Otago's premiere social event (O'Week) to establish whether intervention is warranted. In Study 1, we tracked new students' drinking during O'Week and the academic year using text messages. We found that new students drink more during O'Week than any other time (26 vs. 6) and the pattern of drinking they establish during O'Week continues into the academic year when controlling for pre-university drinking ( $b=0.122$ ,  $p<.001$ ). In Study 2, we used a retrospective survey and found that students experienced more alcohol-related harms during O'Week compared to a 'typical week' (5 vs. 1). In Study 3, we used an intercept survey and found that students drink heavily before the main O'Week events, reaching a Blood Alcohol Concentration (BAC) of 0.062 before the events. Given that students appear to give in to their Hyde by establishing their drinking during O'Week, experiencing a range of harms, and reaching high BAC levels, O'Week may represent a critical time to aim an intervention.

# The relationships among aberrant salience, reward motivation, and reward sensitivity

*S. R. Neumann and R. J. Linscott*

*Department of Psychology, University of Otago*

The aberrant salience (AS) hypothesis offers a potential explanation of how dysregulated dopaminergic firing leads to the symptoms of schizophrenia. However, support for the hypothesis is inconsistent. We sought to elucidate inconsistent findings by investigating the relationship between measures of AS and reward processing. Undergraduates ( $n = 82$ ) completed the self-report Aberrant Salience Inventory (ASI) and three computerised performance tasks: the Salience Attribution Task (SAT) measuring AS and adaptive salience; Effort Expenditure for Rewards Task measuring reward motivation, operationalised as decision to exert effort depending on reward magnitude and probability of winning; and the Stimulus Chase Task, measuring sensitivity to gain and loss outcomes or reward sensitivity.

We found no correlation between the self-report and performance measures of AS nor between measures of AS and loss sensitivity. ASI positively correlated to willingness to expend effort, especially when outcome predictions required greater mental computation or were uncertain. There was a negative relationship between SAT AS and effort for larger more likely rewards. Whereas higher explicit adaptive salience predicted less effort for small or unlikely rewards, higher implicit adaptive salience predicted less effort for both low and high rewards when likelihood of winning was high. Reduced loss sensitivity positively correlated with effort expenditure for larger more likely rewards. The findings support the predicted relationships between reward sensitivity and reward motivation and AS and reward motivation but not AS and reward sensitivity. The lack of relationship between AS measures, and their different relationship to reward motivation, raises important doubts over the validity of AS measures. Therefore, caution should be exercised when interpreting extant literature. Future research should examine the relationships among measures of aberrant salience and reward processing in patients with schizophrenia.

# To report or not to report: Does the decision to report a crime affect memory?

***K. Wake and R. Zajac***

*Department of Psychology, University of Otago*

Making a decision can exert a considerable influence on subsequent judgements and retrospective memory. After choosing to buy free range eggs over caged eggs, for example, we might amplify the importance of nutrition, and recall the difference in price as smaller than it really was. By doing so, we protect ourselves from experiencing post-decision regret. We were interested in whether making a decision to report an ambiguous event to police could exert similar effects. Specifically, could this decision affect the amount and accuracy of information recalled? And could it lead us to erroneously recall crime-consistent behaviours that we never saw? Participants in this study watched a short video in which an adult male could be perceived as being either a burglar or a real estate agent. We then asked participants whether or not they would report the character in the video to the police. One week later, participants returned to the laboratory for a surprise memory test. Preliminary analyses revealed that memory for crime-consistent details differed as a function of decision. Specifically, participants who chose to report the event as crime correctly recognised more details that were schematically consistent with burglars. These participants also incorrectly recalled more details that were schematically consistent with burglars that were not in the video. Contrary to our expectations, memory for details that were schematically consistent with real estate agents did not differ as a function of decision.

# The role of the avian nidopallium caudolaterale in a four-item serial order task

***M. Johnston<sup>1</sup>, D. Scarf<sup>1</sup>, A. Clarkson<sup>2</sup>, and M. Colombo<sup>1</sup>***

*<sup>1</sup>Department of Psychology, University of Otago*

*<sup>2</sup>Department of Anatomy, University of Otago*

Many non-human species, including pigeons, are able to form internal linear representations needed to complete a serial order task that requires the subject to respond to a set of stimuli in a predetermined order. The aim of the current study was to determine the role of the avian nidopallium caudolaterale (NCL), an area essential for higher order executive functioning, in serial order completion. We used tetrodotoxin (TTX) to temporarily silence neuronal activity in the NCL while pigeons completed a 4-item serial order task with coloured squares used as the stimuli. Pigeons received a 1 µl infusion of either saline (control) or TTX 30 minutes prior to testing. There was a significant drop in performance from baseline following a TTX infusion, and no difference following a saline infusion. The findings support the tentative view that the NCL may be a region that supports serial-order behaviour.

# Getting your hands dirty in Dunedin, the joy of creativity and problem solving

**A. Cronin**

*Department of Psychology, University of Otago*

A PhD is often compared to a marathon, but few people talk about the enormous creative potential and output that it involves. While science continues to try and shoebox creativity into measurable units, we can, and do need to question all received wisdom about what creativity is and is not. The history of humanity is one of adaptation and production with a variety of tools, ideas, and minds, and when considering creativity we must acknowledge the long, slow process of production which cannot be measured by one small output. From initial small ideas to process, practice, and perhaps some triumph, we need to see ourselves as creative practitioners, utilising the tools we have to create new things. The application of what we have learned for the benefit of others is to me the most important part of the process. Getting a PhD is not just about being smart, we are also very lucky to be here. Do not be afraid of applying what you are learning in meaningful ways in the world around you. I present some findings my PhD has allowed me to explore, which has led to a richer understanding of how adaptability, breakdowns, adventure, giving back, and learning to accept failure is what a PhD is.

# You snooze you win: Good quality sleep is important for primary school children

***R. Harding<sup>1,2</sup>, J. Haszard<sup>1</sup>, E. Schaughency<sup>2</sup>, and B. Galland<sup>1</sup>***

*<sup>1</sup>Department of Women's and Children's Health, University of Otago*

*<sup>2</sup>Department of Psychology, University of Otago*

The SEALION (Sleep, Education, and Learning in Our Neighbourhood) study investigated prevalence and correlates of sleep-disordered breathing (SDB) in a large community sample of New Zealand (NZ) children aged 6-10 years. In particular, SEALION aims to learn whether SDB is more common in children who are not making adequate academic progress within the NZ curriculum.

Parents/caregivers were recruited through NZ primary schools and parent-targeted Facebook advertisements. To date, 1646 parents/caregivers from all regions completed the on-line survey covering the extent and severity of SDB symptoms (SDB scale of the Pediatric Sleep Questionnaire) and children's and parent's demographic data and children's health-related information. Parents rated their child's academic performance based on teacher feedback, relative to National Standards (well below/below/at/above) across the domains of reading, writing, and maths.

Preliminary analyses (n=1646) shows the prevalence of children rated as being "at risk" of SDB was 16.0% (95% CI = 14.3 – 17.9%). Of the children who were "at risk" of SDB the proportion who were achieving below the National Standards was 27.7% for reading, 33.5% for writing, and 31.0% for maths. Of the children "not at risk" of SDB, 14.0% for reading, 19.4% for writing, and 13.9% for maths were achieving below National Standards according to parent report.

These preliminary findings suggest that more NZ children with, than without, SDB may be at risk of performing below National Standards academic performance ratings. Equipping professionals to be able to identify children at risk of sleep problems could facilitate early screening and referral for possible diagnosis and treatment to benefit the children's long term health and potentially remove barriers to learning and academic achievement.

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