YSGOL SEICOLEG • SCHOOL OF PSYCHOLOGY

CYNHADLEDD YR HAF PhD • SUMMER CONFERENCE

Pontio PL5
14eg o Fehefin 2017 • 14th of June 2017

RHAGLEN & CHRYNODEBAU • PROGRAMME & ABSTRACTS

COLEG GWYDDORAU IECHYD AC YMDDYGIAD • COLLEGE OF HEALTH AND BEHAVIOURAL SCIENCES
Welcome to the PhD Summer Conference 2017!

In continuation of the highly successful series of student-led PhD Summer Conferences, this meeting will offer third year PhD candidates the opportunity to present an overview of their doctoral work to peers and staff of the Psychology department.

Since 2014, the Summer Conference has provided an excellent platform for students to showcase their research and hard work: a valuable opportunity for feedback and discussion from colleagues. Included in this booklet is the Conference programme and abstracts, containing a snapshot of the variety and quality of scientific enquiry led by young scientists at Bangor University.

Kohinoor Darda
Aoife Fitzpatrick
Trefnwyr y Gymhadledd • Conference Organisers
Cyfieithiad i’r Gymraeg gan Gwennant Mai Evans
Rhaglen • Programme

Pontio PL5

1300-1305  Richard Ramsey  
Croeso a chyflwyniad • Welcome and introduction

1305-1335  Joshua Payne  
Effect of TDCS on implicit learning during language processing

1335-1405  Hannah Rettie  
Exploring attentional bias and the overall recovery experience of individuals with a drug or alcohol dependency

1405-1435  Cameron Downing  
Understanding spelling and handwriting difficulties among children with neurodevelopmental disorders: the cases of dyslexia and/or developmental coordination disorders (DCD)

1435-1515  Te/Coffi Toriad • Tea/Coffee Break

1515-1545  Shelby DeMeulenaere  
The effects of a mindfulness-based stress reduction course on neurometabolite markers of dementia and aging

1545-1615  Timothy Davies  
Modelling preferences for variable over fixed interval reward schedules

1615-1645  Dawn Owen  
An evaluation of the online universal programme COPING Parent: a pilot randomised control trial

1645-1700  Sylwadau i gloi • Closing remarks

Refreshments will be served in the Brigantia foyer after the talks

Welsh translations by Gwennant Mai Evans
Joshua Payne
Dr. Marie-Joséphe Tainturier and Dr. Paul Mullins

Effect of tDCS on Implicit Learning during Language Processing

Transcranial direct current stimulation (tDCS) is a neuromodulatory technique that has been applied to the study of a broad range of language processes, including naming and vocabulary learning. tDCS has shown promise as an adjunct tool for aphasia rehabilitation. However, the circumstances under which tDCS reliably affects language processing in the healthy brain are unclear. In study one, we explored whether tDCS, applied to left inferior frontal and posterior superior temporal regions, would result in an increase in repetition priming during picture naming. We aimed to assess whether repetition was necessary to observe tDCS effects in naming, and whether the predicted effects were specific to pictures named during stimulation. We did not observe a reliable effect of tDCS, which may be due to the apparent ease of a naming task in healthy, young adults. Several studies have demonstrated a tDCS enhancement effect in implicit vocabulary learning tasks, which eliminate ceiling effects. In a second study, we tested whether tDCS would improve the implicit acquisition of real, foreign nouns, expanding on previous studies by manipulating phonological similarity (cognate status). Although we did not observe an effect of tDCS at the group level, participants with lower phonological memory abilities showed improved acquisition of non-cognate (phonologically unrelated) vocabulary items, relative to sham. The implications for the application of tDCS to the study of language processing is discussed.

Hannah Rettie
Dr. Lee Hogan and Prof. Miles Cox

Exploring Attentional Bias and the Overall Recovery Experience of Individuals with a Drug or Alcohol Dependency

In line with the current recovery movement, this PhD aimed to explore successes and positive experiences in addiction journeys. Project one explored whether attentional bias towards alcohol and recovery-based stimuli could predict service users’ treatment outcomes. 45 clients in detoxification and 36 staff members as controls completed a Stroop task containing personally relevant words. Follow-up occurred three months later, where informal interviews determined treatment outcome. Positive-change words were the best predictor of treatment success. Clinical implications of findings will be discussed, alongside the need for further research before the recovery-Stroop is implemented clinically as a predictive tool. The informal interviews in project one highlighted the diversity of recovery experiences successful individuals had after detoxification. Therefore, the final two projects explored recovery experiences beyond this initial treatment phase. Specifically, we researched the impact of recovery group involvement, through both qualitative and quantitative methodologies. The qualitative project explored individuals’ experiences in social-based recovery groups, as these groups are un-researched. Ten individuals participated in semi-structured interviews, and interpretative phenomenological analysis identified four key themes: the group’s role in recovery, personal choice and flexibility in recovery experiences, group as an inclusive familial unit, and active involvement in recovery group. The final project was based on Moos’ (2008) literature review, which identified 12 components of a ‘successful’ recovery group. An online survey (Sensemaker) asked 140 individuals in recovery groups to share their stories, and rate how offered and important each of Moos’ 12 components are within their group. The results are currently being analysed.
Cameron Downing

Understanding Spelling and Handwriting Difficulties Among Children with Neurodevelopmental Disorders: The Cases of Dyslexia and/or Developmental Coordination Disorder (DCD)

Models of writing largely ignore handwriting and spelling (transcription) skills in favour of higher level processes. However, difficulties in transcription skills, which often arise due to neurodevelopmental disorders, can result in atypical writing. This programme of research sought to delineate spelling and handwriting processes among children with dyslexia (a language disorder) and/or DCD (a motor disorder) using a three-phase design. This talk will focus on data highlights from each of the three phases. In study one (N = 733), I will demonstrate the utility of a class screening battery with a marker approach to identify children at risk of literacy and/or motor difficulties. In study two (phase two), I will discuss data collected from children who completed a follow up diagnostic battery (N = 106), which shows dissociable spelling and handwriting profiles between dyslexia and DCD. In the third phase, I examine the online handwriting (and spelling) deficits identified in children from phase two using online pen-tracking tools. I will present data from a study (N = 99) investigating the presence and nature of impairments in retaining or accessing the relevant motor programmes of orthographic characters using a novel letter-like training paradigm. Findings from these studies indicate that transcription difficulties among children with dyslexia appear to be largely attributable to language (phonological/orthographic) processing impairments, while transcription difficulties amongst children with DCD seem mainly attributable to visual-motor impairments. Furthermore, impairments among children with co-occurring dyslexia and DCD are similar in severity to those with a singular disorder. Implications of these findings will be discussed.

Shelby DeMeulenaere

The effects of a Mindfulness-Based Stress Reduction course on neurometabolite markers of dementia and aging

Initial research suggests that Mindfulness-Based Interventions (MBI) may mitigate neurocognitive and behavioral decline associated with aging and dementia. However, limited studies have examined changes in neurometabolites with MBI training in aging, and factors that may influence neurocognitive modifications associated with MBI. This pseudorandomized study with a wait-list control group investigated the impact of an eight-week standardized Mindfulness-Based Stress Reduction (MBSR) course on neurometabolites in older adults, aged 60 and above. In addition, the study aimed to examine the impact of an MBSR course on memory, executive function and self-reports of perceived stress, coping strategies, emotion regulation, and well-being. To index changes in neurometabolite levels, before and after mindfulness training, single-voxel Magnetic Resonance Spectroscopy in the Posterior Cingulate Cortex was used. Sub-scales of the Weschler Memory Scale III and Mini Mental Status Examination were employed before and after mindfulness training to measure changes in memory and executive function. Finally, self-reports of perceived stress, coping, emotion regulation, and well-being were utilized. It was predicted that MBSR may modify neurometabolites associated with aging and dementia, such as GABA, N-acetylaspartate, and Myo-inositol. Moreover, decreases in stress and improvements in memory, executive function, coping, adaptive emotion regulation strategies, and well-being were expected. Finally, it was postulated that changes in neurometabolites concentration would be associated with reductions in perceived stress and increases in memory, executive function, well-being, coping, and adaptive emotion regulation skills. Overall, this study will provide insight into the impact of MBSR on neurocognitive mechanisms linked with aging and dementia.
**Timothy Davies**  

**Modelling Preferences for Variable over Fixed Interval Reward Schedules**

Evolutionary perspectives theorise that adaptive foraging strategies which promote the maximisation of energy consumption underpin human food seeking behaviours in the current environment, and contribute to the development of problematic eating and obesity. To test this hypothesis we formulated experiments using highly valued edible food rewards that tapped into different aspects of foraging theory in humans, such as risk-sensitivity, with manipulations of resource availability and energy budgets. We then analysed behavioural performance on these tasks in relation to overweight and obesity, as well as their associated risk factors. Furthermore various computational models, such as Temporal Difference learning algorithms, were fit to and validated against our data as a novel approach to identify the possible mechanisms that underlie behaviour on these tasks, such as impulsivity and motivation.

**Dawn Owen**  

**An evaluation of the online universal programme COPING Parent: A pilot randomised controlled trial**

Introduction: Parents face many new challenges in bringing up children and many parents now access the internet for parenting support and advice. However, whilst much is known about patterns of parenting that support children’s positive development and a lot of research has demonstrated the effectiveness of parenting programmes to support parents of high challenge children, there is relatively little evidence-based information on parenting in general available on the web. The COPING parent (COnfident Parent INternet Guide) programme is a 10-week web based programme that presents informed parenting principles and activities based on core social learning theory to support parents in establishing positive relationships with children. The programme provides information and video examples of parenting skills, uses quizzes to test knowledge and suggests home activities to practice the behavioural skills.

Methods: This was a pilot randomised controlled trial with intervention and wait-list control conditions. Parents were randomised on a 2:1 ratio to intervention or wait-list control conditions (stratified according to child gender and age). The primary outcome measure was positive parenting as measured by a behavioural observation of parent-child interactions using the Dyadic Parent-Child Interaction Coding System. Data was collected at baseline and three months later (post-intervention) for all participants and six months post-baseline for the intervention group only.

Results: For the primary outcome, there was a significant difference between intervention and wait-list control conditions with parents in the intervention condition demonstrating a significant reduction in observed indirect command and a significant increase in observed praise.

**Prof. Robert Rogers and Dr. Hans Peter-Kubis**
Cynhadledd Doethuriaeth haf 2017

Diolch yn fawr iawn am eich presenoldeb a'ch cyfraniad i gynhadledd Doethuriaeth yr haf. Rydym yn gobeithio eich bod wedi mwynhau cyflwyniadau’r dydd, a amlygai’r amrywiaeth a'r arloesedd o fewn yr ysgol Seicoleg ym Mhrifysgol Bangor. Os oes gennych ddiddordeb mewn ail-weld unrhyw un o'ryr cyflwyniadau, gweler safle we'r Ysgol Seicoleg ble fydd nifer o'ryr cyflwyniadau yn cael eu dangos yn y dyfodol agos.

PhD Summer Conference 2017

Many thanks for your attendance and contribution to the PhD Summer Conference. We hope you enjoyed the presentations of today, highlighting the diversity and innovation within the School of Psychology at Bangor University. If you are interested in revisiting any of the presentations please see the Bangor Psychology webpage where a number of the talks will be uploaded in due course.