

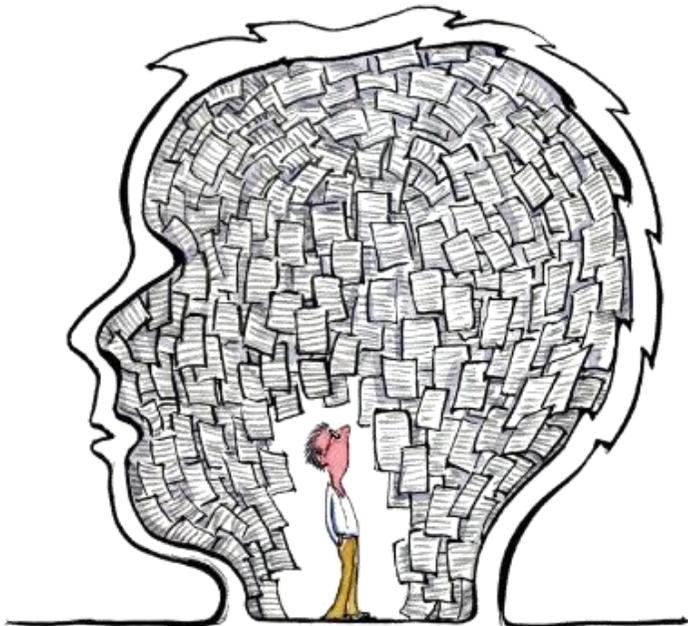
# Mind Wandering & Mindfulness

22nd June 2018  
Newcastle-upon-Tyne

Mind-wandering, Spontaneous cognition,  
Mindfulness, Meta-awareness, Consciousness



**Northumbria**  
**University**  
NEWCASTLE





# Conference organisers.

## Léa Martinon

PhD researcher

Lead organiser of the event



## Audrey Linden

PhD researcher



If you have any questions, look out for people  
with a name badge.



# Programme.

## **09.00 – 09.50: Registration – coffee/tea/snacks**

09.50 – 10.00: Welcome speech.

10.00 – 10.45: Keynote 1 – Dr. Leigh Riby

10:45 – 11:05: Talk 1 – Elizabeth Orme

## **11.05 – 11.25: Coffee/Tea break**

11.25 – 11.45: Talk 2 – Mitchell Hogg

11.45 – 12.05: Talk 3 – Amy Johnson

## **12.05 – 13.45: Lunch and poster break.**

13.45 – 14.30: Keynote 2 – Dr. Micah Allen

14.30 – 14.50: Talk 4 – Karen Goodall

## **14.50 – 15.20: Coffee/Tea break**

15.20 – 15.40: Talk 5 – Daniel Jolley

15.40 – 16.00: Talk 6 – Lynsey Mahmood

16.00 – 16.40: Talk closure – Léa Martinon

## **19.00: Conference dinner at the Pitcher and Piano**

**NB442:** Registration/lunch and poster presentation.

**NB433:** Keynote speeches and talks.

# Keynote 1

Dr. Leigh M. Riby

*Department of Psychology, Northumbria University.*



Dr Riby is an internationally recognised researcher on the topics of successful ageing and the cognitive neuroscience of the wandering mind. He has extensive publications in applied and fundamental research in these areas, especially with reference to emerging neuroimaging/physiological technologies. He has published two books and particularly relevant here, a catalogue of articles examining mind wandering and novel cognitive interventions. Current projects are using multi-modal imaging and other physiological techniques to disentangle the processes involved during mind wandering episodes and importantly are assessing the utility meditation interventions in chronic illness.

# The Neuroscience of the Wandering Mind and Meditation.

Dr. Leigh M. Riby

*Department of Psychology, Northumbria University.*

A key challenge facing the neurosciences is outlining how thoughts unfold when unconstrained by an external task. The goal of the present talk is to evaluate the processes engaged during such thoughts using EEG methodology. Part one will focus on a study exploring the dominant theories accounting for mind wandering experiences. Previous research suggests that mind wandering emerges through general problems in distraction, deficits of task-relevant processing (the executive-function view), or a general reduction in attention to external events regardless of their relevance (the decoupling hypothesis). To assess these competing accounts, participants performed a visual oddball task to investigate the processing of features in the environment. During the task, they were required to differentiate between a rare target stimulus (to measure task-relevant processes), a rare novel stimulus (to measure distractor processing), and a frequent non-target stimulus. Mind wandering was measured immediately following task performance using a validated retrospective measure. High levels of mind wandering were associated with a reduction in cortical processing of task-relevant events and distractor stimuli. These data contradict the suggestion that mind wandering is associated with distraction problems or specific deficits in task-relevant processes. Instead, the data are consistent with the decoupling hypothesis: that mind wandering reduces the processing of sensory information irrespective of that information's task relevance. Part 2 of the presentation examines how our lab is leading the way in utilizing such neuroscience tools to explore key issues in what has often been considered an opposite construct; namely mindfulness.

# Keynote 2

Dr. Micah Allen

*Department of Psychiatry, Cambridge University.*



I'm currently a Research Associate at Cambridge Psychiatry, where I work together with Professor Paul Fletcher to investigate the neural computations underpinning brain-body interaction. We're currently applying for funding to launch my own Brain-Body Neuroscience Lab within Cambridge Psychiatry, so that we can better understand how interoception shapes psychiatric and health-harming disorders. At the most general level, my research interests concern the computational mechanisms by which visceral and somatic states influence subjective awareness, emotion, and self-monitoring.

**Academic Biography:** My academic career began at the University of Central Florida, where I was mentored by Shaun Gallagher in the interdisciplinary application of philosophy, phenomenology, and experimental psychology to the embodied self. In 2012, I completed a PhD in Neuroscience at Aarhus University within the Interacting Minds Centre, where I worked with Chris Frith and Andreas Roepstorff to investigate how mindfulness-based stress reduction impacts cognitive control and affective neural processing. From 2013 – 2018 I was a Postdoctoral Fellow jointly in the FIL and ICN at University College London, where I worked with Professor Geraint Rees and Karl J Friston to develop embodied predictive processing models of metacognitive inference.

# Mind-wandering, mindfulness, and metacognition: three spokes on the wheel of self?

Dr. Micah Allen

*Department of Psychiatry, Cambridge University*

What is it to be a human mind? Plato first argued that we are best defined by our innate capacity for reasoned thought and self-reflection. Yet such self-awareness is also seemingly at odds with our nature as creatures of comfort and at times, chaos. Rather than embrace the examined self, we retreat from deliberate metacognition. Instead, we seem at every turn to favour the idle stimulation of our ever-wandering thoughts. Perhaps we should turn away from Western thinking on the matter; to instead embrace an esoteric tradition of mindfulness and contemplative practice. This view, if somewhat caricatured, is often seen in the psychological literature, where mindfulness meditation is offered as a 'cure' to rid oneself of mind-wandering and replace it with metacognition. In this somewhat freewheeling talk, I will attempt to refute this notion that mindfulness and metacognition sit on one end of a spectrum apart from which mind-wandering sits opposite. Instead, I will argue that mind-wandering is a core human capacity, and that healthy human functioning sits in the balance between spontaneous thought and deliberate metacognition. The question is not then, how can one use mindfulness or metacognition to rid themselves of mind-wandering, but rather can these capacities enlighten our natural selfhood?



# Talk closure

## Mind Wandering in Ageing.

Léa M. Martinon

*Department of Psychology, Northumbria University.*

The ability to self-generate thoughts in imagination is a central aspect of human experience. Mind-wandering experiences are linked to important features of human cognition and are portrayed as heterogeneous by their contents, forms and outcomes. Robust findings have documented a decrease in mind-wandering experiences with increasing age. Yet, the heterogeneity of such experiences in this population is largely overlooked. By measuring thoughts' content in multiple context, we explored the impact of age on mind-wandering experiences. Firstly, by manipulating task difficulty it was demonstrated that young adults present more flexibility when it comes to thoughts management. Secondly, the investigation of thoughts' meta-awareness revealed age differences. Therefore, older adults reported to experience more future-related thoughts and less task-related interferences with awareness than without. Lastly, practicing meditation for 28 days selectively reduced past-related thought, while preserving future-thoughts and encouraging visual ones. Overall, older adults seem to present a different mind-wandering profile. As such, they tend to experience more focused and visual thoughts as well as more task-related interferences. When it comes to thoughts temporality, it seemed that older adults experience less past-related thoughts but similar future-related thoughts, compared to young adults. Together, these findings provided a thorough description of the heterogeneous experience of mind wandering in ageing, as well as documenting the influence of key features.



# Talk 1.

The use of combined EEG and Eye tracking to investigate the impact of mindfulness training on cognition.

Elizabeth Orme<sup>1</sup>, Anna Maughan<sup>1</sup>, Harry Clelland<sup>1</sup>, Rian Elcoate<sup>1</sup>, Jordan Dawson<sup>1</sup>, and Leigh Riby<sup>1</sup>

<sup>1</sup>*Northumbria University*

As both scientific and clinical interest in mindfulness meditation flourishes, a number of reviews have attempted to review the multitude of mindfulness approaches (for instance, Baer, 2003), including both neuropsychological reviews focusing on the cognitive underpinnings of mindfulness (Chiesa, Calati & Serretti, 2011). It is thought that that Mindfulness training enhances attentional capabilities through the improvement of executive attention deficits (Ainsworth et al., 2013), whereby these higher functions are targeted, including conflict resolution and adjustment of sensory input so to sustain appropriate attentional allocation. Focussed Attention Mindfulness (FAM) has been shown to specifically induce a narrow attentional focus (e.g. Brefczynski-Lewis et al., 2007; Hasenkamp et al, 2012), potentially increasing individuals' ability to focus their attention on task-relevant information. In contrast, Lippelt et al (2014) argue that Open Monitoring Meditation (OMM) may focus on broadening awareness as a whole and facilitate successful emotion regulation. In this study, we examine whether the two subtypes of mindful training (FAM; OMM) differentially impact on known EEG markers of attentional and emotional control alongside sophisticated monitoring of the environment using eye tracking methodology, whilst processing emotional visual scenes. Here, we aim to present some interim findings, and discuss the benefits of combining EEG with Eye tracking.

**Key words:** Mindfulness, EEG, Attention

## Talk 2.

### Investigating the Feasibility of a Single Ocean Breathing Training Session upon the Symptomology & Autonomic Functioning of Sub-Clinically Anxious Individuals.

Mitchell James Hogg<sup>1</sup>, Vincent Deary<sup>1</sup>, and Helen Collard<sup>1</sup>

<sup>1</sup>*Northumbria University*

As both scientific and clinical interest in mindfulness meditation flourishes, a number of reviews have attempted to review the multitude of mindfulness approaches (for instance, Baer, 2003), including both neuropsychological reviews focusing on the cognitive underpinnings of mindfulness (Chiesa, Calati & Serretti, 2011). It is thought that that Mindfulness training enhances attentional capabilities through the improvement of executive attention deficits (Ainsworth et al., 2013), whereby these higher functions are targeted, including conflict resolution and adjustment of sensory input so to sustain appropriate attentional allocation. Focused Attention Mindfulness (FAM) has been shown to specifically induce a narrow attentional focus (e.g. Brefczynski-Lewis et al., 2007; Hasenkamp et al, 2012), potentially increasing individuals' ability to focus their attention on task-relevant information. In contrast, Lippelt et al (2014) argue that Open Monitoring Meditation (OMM) may focus on broadening awareness as a whole and facilitate successful emotion regulation. In this study, we examine whether the two subtypes of mindful training (FAM; OMM) differentially impact on known EEG markers of attentional and emotional control alongside sophisticated monitoring of the environment using eye tracking methodology, whilst processing emotional visual scenes. Here, we aim to present some interim findings, and discuss the benefits of combining EEG with Eye tracking.

**Key words:** Breathing Intervention, Vagus Nerve, Autonomic Dysfunction

## Talk 3.

### Reaching out to Carers of Someone with Schizophrenia or Psychosis: A Model for an Online Intervention to Improve Carer Wellbeing and Quality of Life.

Amy Johnson<sup>1</sup>

<sup>1</sup>*Northumbria University*

The wellbeing and quality of life (QoL) of carers of someone with schizophrenia or psychosis has been shown to be affected due to their caring role. Although support is available (e.g. family interventions), carers report difficulty accessing these. Online support could overcome this, providing the ability to access information and communicate with other carers almost instantly. This PhD project aims to develop a model for an online intervention, by exploring carer's online support use alongside carer and professional's views towards developing an online intervention. This was a mixed methods design (consisting of qualitative and quantitative components). Eight carers completed health questionnaires at two time-points (baseline and 6 weeks) whilst engaging in a weekly diary monitoring online support use. Following completion, carers were invited to an individual interview about opinions of online support and views towards intervention development. Six professionals, who regularly worked with carers of someone with a severe mental illness, were also invited to attend individual interviews to allow triangulation of views. Quantitative results showed an increase in wellbeing, total QoL and depression, as well as a reduction in anxiety. Qualitative results were analysed via thematic analysis, themes identified included "Knowledge is Power" and "Peer Support". Qualitative comparative analysis was used to determine relevant casual conditions relating to online support use and influence on outcome variables. Results will be used in the development of a model for an online intervention for carers of someone with schizophrenia or psychosis. Both model and results will be discussed and future research proposed.

**Key words:** Carer, Online, Health

## Talk 4.

Dispositional mindfulness: relationships with attachment, attentional control and emotion regulation in adolescents and young people.

Karen Goodall<sup>1</sup>, Zara Brodie<sup>2</sup>, and Matthias Schwannauer<sup>1</sup>

<sup>1</sup>University of Edinburgh, <sup>2</sup> University of the West of Scotland

Previous research has demonstrated an association between attachment and dispositional mindfulness, suggesting that the tendency to attend to the present moment without judgement may be nurtured through early interpersonal relationships. Little is known about the nature of this relationship in non-adult populations. This study investigated the relationship between mindfulness, attachment and related variables in an adolescent population. 284 participants age 12-24 completed measures of mindfulness, emotion regulation and attachment. The results indicated no relationship between age and dispositional mindfulness. Attachment dimensions explained 19% of variance in mindfulness. Parallel mediation analysis indicated that the relationship between avoidance and mindfulness was mediated by emotion clarity, limited access to emotion regulation strategies and difficulties in remaining on task when distressed. The relationship between anxiety and mindfulness was mediated by low emotion awareness and clarity and limited access to emotion regulation strategies. The results suggest that attachment may relate to trait mindfulness particularly through nurturing awareness and clarity of affect and through developing a range of strategies to regulate negative emotion.

**Key words:** Mindfulness, Attention, Regulation

## Talk 5.

Mindful of conspiracy theories: Examining the link between mindfulness and belief in conspiracy theories.

Daniel Jolley<sup>1</sup>, Lynsey Mahmood<sup>2</sup>, and Tanya Scradler<sup>1</sup>

<sup>1</sup>*Staffordshire University*, <sup>2</sup>*City, University of London*

Conspiracy theories are widespread in society and accompany many significant events. Research has shown that exposure to conspiracy theories can lead to potentially negative consequences on intentions to engage in the political system, climate science, and childhood vaccination. Across three studies, this current research has examined a tool that provides a route to reduce belief in conspiracy theories, and thus potentially prevent these negative societal impacts. In Study 1, trait (but not state) mindfulness was shown to be a negative predictor of belief in conspiracy theories. In Study 2, whilst state (but not trait) mindfulness was successfully increased after a short 5-minute mindfulness exercise, this mindfulness manipulation did not reduce belief in conspiracy theories. In Study 3, replicating Study 1, trait mindfulness was a negative predictor of belief in conspiracy theories. In addition, experience of mindfulness was associated with a reduction in belief in conspiracy theories, via increased trait mindfulness. Together, this research uncovers the possibility that trait (but not state) mindfulness may be a successful avenue to reduce reliance on conspiracy theories.

**Key words:** Conspiracy theories, Trait Mindfulness, Intervention

## Talk 6.

Same job, different name: Mindfulness attenuates attributional errors towards outgroup job seekers.

Lynsey Mahmood<sup>1</sup>, Tim Hopthrow<sup>2</sup>, and Georgina Randsley de Moura<sup>3</sup>

<sup>1</sup>City, University of London, <sup>2</sup>University of Kent, <sup>3</sup>University of Kent

Minority group members may be disadvantaged in job applications due to automatic and unconscious bias in evaluations. In particular, attributions of causality can lead to job candidates being negatively evaluated based on stereotypes of the racial group to which they belong. This could help to explain a consistent trend in unemployment rates whereby double the number of Black individuals face unemployment compared to White individuals. MTurk workers (N= 391), first completed a 5-minute mindfulness body scan manipulation. Following this they read a scenario that manipulated group membership using stereotypically Black (Jamal) vs. White (Jamie) sounding names. Participants were asked to rate locus of attribution for the target's position (situational vs. dispositional) and suggest possible reasons for their position. We found that a brief, 5-minute mindfulness manipulation attenuated attribution bias for outgroup targets. The experiment also highlighted that participants who completed the mindfulness manipulation were over five times more likely to suggest situational attributions for the outgroup target's behaviour than for the ingroup target. This has implications for hiring situations and training that organisations may put in place to increase equality in person evaluations for job seekers. The findings provide positive evidence for an attenuating effect of mindfulness that could benefit job seekers, especially those who are considered members of an outgroup.

**Key words:** Mindfulness, Attribution, Intervention

# Poster 1.

Wandering Mice, Wandering Minds: Using computer mouse tracking to predict mind wandering.

Mariana Rachel Dias da Silva<sup>1</sup>, Marie Postma-Nilsenová<sup>1</sup>, and Frouke Hermens<sup>1</sup>

<sup>1</sup>*Tilburg University*

Mind wandering is a state in which an individual's attention is not fully focused on the task at hand. Mind wandering affects performance in many tasks requiring focused attention, including (online) learning. Previous studies have examined eye tracking and self-report as a method to assess whether a person is mind wandering. Because the first method requires specialized technology and the second method may be susceptible to reporting biases, we here examine whether mouse tracking can be used to predict mind wandering in tasks involving classical computer interfaces. Assuming that mouse trajectories towards a particular response on the screen are continuously updated by time-dependent and temporally-dynamic cognitive processes, as a behavioral methodology, mouse tracking could provide unique insight into a person's thoughts. In our experiment, a total of 183 students completed a mouse-based operation span task, during which their thoughts were probed and their mouse movements recorded. Mixed model analysis of the recordings indicated that speed errors, time to press start, initiation time, total distance, and average speed can be used as predictors of task-unrelated thoughts. The results show that mouse movements may be able to provide an objective measure of mind wandering in online tasks.

**Key words:** Mouse Tracking, Mind Wandering, Working Memory

## Poster 2.

The effects of Abbreviated Progressive Muscle Relaxation on perceived distress during demanding tasks.

Emily J Arkle <sup>1</sup> and Mark A. Wetherell<sup>1</sup>

<sup>1</sup>*Northumbria University*

Repeated exposure to acute stress can have a negative impact on health and wellbeing, it is therefore important to identify techniques for buffering these negative effects. In particular, there is an emphasis on humans using their own mind in a natural restorative response to stress management. Abbreviated Progressive Relaxation Therapy (APRT) is a technique involving the tensing and relaxing of different muscle groups to achieve a state of deep relaxation and has had positive effects in a range of clinical populations. The current study assessed whether APRT could reduce stress and anxiety increases typically observed during a laboratory stressor representative of everyday stress. The sample, comprising twenty-two female and 8 male healthy participants (mean age 23, SD 7.8) was recruited through opportunity sampling, and allocated to the intervention (20 minutes of APRT) or control condition, prior to a 15 minute session of the Multitasking Framework, a laboratory stressor that elicits stress through cognitive workload. Self-rated psychological states of anxiety, stress and happiness were recorded at baseline, after the intervention period and following the stressor. Results showed that APRT significantly reduced self-rated anxiety after the intervention and after the stressor. APRT also significantly reduced self-rated stress following the stressor. Furthermore, APRT significantly increased perceived performance following the stressor. The current study found that APRT significantly reduced levels of distress associated with demanding tasks whilst increasing perceptions of performance ability. APRT may therefore provide a useful tool for the self-management of stress in everyday demanding situations.

**Key words:** Relaxation, Anxiety, Stress

## Poster 3.

### The Effects of Focused Attention Meditation Training on Attention.

Paul Sharpe

Mindfully attending to the sensations of breathing is a typical meditation technique for training focused attention. To put this another way, focused attention meditation may reduce mind wandering. The Attention Network Task (ANT) is a computer task which measures three distinct types of visual attention: alerting, orienting, and executive control. The ANT has become a popular measure of the effects of mindfulness on attention. One study (Becerra, Dandrade, & Harms, 2016) has shown that, compared with untrained participants, people who meditated daily for eight weeks showed improved orienting, and executive control of attention. In common with many areas of psychological science, this finding requires replication before it can be considered reliable. Two studies explored the effects of 4 weeks of mindfulness meditation training on the ANT, using breath counting as a validated measure of mindfulness (Levinson, Stoll, Kindy, Merry, & Davidson, 2014). The results will be compared and contrasted with the findings of Becerra et al. (2016). If the reliability of this finding can be established, more stringent experiment controls, and alternative measure of attention may be necessary for understanding the psychological mechanisms by which mindfulness meditation improves attention/reduces mind wandering.

**Key words:** Meditation, Mindfulness, Attention

## Poster 4.

Candidate mechanisms underlying spontaneous future thinking:  
A summary of three studies.

Scott Cole<sup>1</sup>, Theo Jones<sup>1</sup>, Maddison Barnes<sup>1</sup>, and Charlotte Elwell<sup>1</sup>

<sup>1</sup>*York St John University*

Although cognitive mechanisms underlying voluntary future thinking have been the focus of empirical and theoretical work, processes underlying spontaneous future thoughts (SFTs) have been largely neglected. In three studies, we sought to better understand how SFTs come to mind. In Study 1 (N = 31), participants recorded SFTs in daily life and both voluntary future thoughts and SFTs in the laboratory. It was found that SFTs were moderately novel, indicating they were not replays of prior experience or novel hypothetical scenarios. Generally, SFTs were very similar to previously constructed voluntary future thoughts ('memories of the future'), with some capacity for novel construction demonstrated. In Study 2 (N = 30), a within-groups design was employed to assess the effect of familiarity of verbal cues used to elicit SFTs. If SFTs are 'memories of the future', familiar cues (e.g. town centre) should cue a greater number of SFTs than novel cues (e.g. rice fields). Unfortunately, contamination across conditions prevented data analysis. In Study 3 (N = 64), we therefore conducted the same manipulation in a between-groups design, finding that familiar setting cues (versus novel setting cues) elicited a greater number of SFTs ( $d = .55$ ). In sum, Study 1 indicated that SFTs were largely 'memories of the future' with some supporting evidence provided by Study 3. The results of these studies shed light on basic theoretical understanding of SFTs.

**Key words:** Future Thinking, Spontaneous Thought, Mind-Wandering

## Poster 5.

Early perceptual ERP activity distinguishes expert from novice meditators during response inhibition in the Sustained Attention to Response Task.

Joanna Greer<sup>1</sup>, Léa M. Martinon<sup>1</sup>, Sheridan Edwards<sup>1</sup> and Leigh M. Riby<sup>1</sup>

<sup>1</sup>*Northumbria University*

Experienced meditators are widely reported to be experts in attentional control and have a bias towards ‘here and now’ thinking. Importantly, changes in attention of this nature along with greater behavioural inhibition are linked to significant health and wellbeing outcomes. The current study systematically explored electrophysiological (ERPs) components of attentional and inhibitory processing using well-established neurocognitive tasks with a view to understanding the information processing style of expert meditators. Brain activity was recorded from a group of novice and expert meditators whilst they performed two versions (easy vs. difficult) of the Sustained Attention to Response Task (SART), a Go / NoGo paradigm used extensively with typically developing and clinical populations to probe 1) the efficient processing of detail in the environment, 2) overall levels of attention and task focus, 3) inhibitory control, and 4) the ability to monitor task performance. Preliminary ERP data indicate early perceptual activity in the expert meditators between ~50 – 200ms post stimulus during the NoGo trials of the difficult version of the SART. Early perceptual processing is thought to reflect sensory gating mechanisms, whereby higher cognitive processes are protected from interference from irrelevant information. These preliminary results here suggest a more efficient sensory gating mechanism in expert meditators compared to novice meditators when greater demands are placed on attentional processing. Further investigation is required to identify whether this neural mechanism compensates for greater cognitive load, and the function of this early perceptual processing in the neurocognitive profile of attentional and inhibitory control in expert meditators.

**Key words:** Perceptual Processing, ERPs, Expert Meditators

## Poster 6.

### Rumination, Self-Reflection and the Temporal Focus of Mind Wandering Episodes.

Daisy Shrimpton<sup>1</sup>, Leigh M. Riby<sup>1</sup>, and Deborah McGann<sup>1</sup>

<sup>1</sup>*Northumbria University*

Previous findings have highlighted the role of self-focus during mind wandering. In present work, we investigated individual differences in negative rumination and positive self-reflection and the impact on mind-wandering experiences. Thirty-three participants were required to complete the Sustained Attention Response Task (SART), aimed at inducing mind-wandering episodes, whilst also probing the content of thought in terms of temporal focus. Self-report questionnaires were also administered after the SART to measure dispositional differences. Those individuals with reflective self-focus showed a strong positive association with positive and constructive thoughts. Critically, ruminative self-focus was positively associated with a tendency for the mind to wander towards anguished fantasies, failures and aggression, but it was also positively associated with positive and constructive thoughts. While dispositional differences in self-focus showed no relationship with the temporal perspective of thoughts when probed during a cognitive task, performance on the task itself was related to whether participants were thinking about the past, present or future during that activity. Such findings are discussed in relation to the heterogeneous nature of mind-wandering.

## Poster 7.

### Glucose Fuels the Wandering Mind.

Leigh M. Riby<sup>1</sup>, Joanna Greer<sup>1</sup>, and Elizabeth Orme<sup>1</sup>

<sup>1</sup>*Northumbria University*

Previous research has investigated the impact of glucose regulation ability on cognitive performance. However, what has been neglected is how glucose is associated with the capacity for processing self-generated thoughts. On day 1 of the study, the ability of a group of 36 younger and 36 older individuals to metabolize glucose was assessed using the gold standard two-hour glucose tolerance test. Twenty-four hours later, the same group of participants returned to the laboratory to perform a non-demanding choice reaction time task during which experience sampling was used to assess the frequency with which they generated thoughts that were unrelated to the here and now. Analysis indicated that younger individuals who were the most efficient at metabolizing glucose exhibited mind wandering that spanned longer time periods. Given the importance of self-generated thought in daily life, these results suggest that the capacity to mentally simulate events not present in the immediate environment is highly dependent on efficient glucose metabolism.

## Poster 8.

Wandering Mice, Wandering Minds: Using computer mouse tracking to predict mind wandering.

Michael A. Smith<sup>1</sup>, Alexandra Thompson<sup>1</sup>, Lynsey J. Hall<sup>1</sup>, Sarah F. Allen<sup>1</sup>, and Mark A. Wetherell<sup>1</sup>

<sup>1</sup>*Northumbria University*

Mindful writing is advocated as a useful technique for enhancing wellbeing. While mindful writing exercises are many and varied, it is typically suggested that the individual spends 5-30 uninterrupted minutes per day focussing on a topic of their choosing and writing in detail about this topic. The efficacy of this technique for enhancing wellbeing is largely anecdotal, with very few empirical studies having been published on this topic. In the present study, participants (N = 71, 19 males, mean age = 28.2, SD age = 12.4) were asked to complete one of two writing tasks for 20 minutes per day over three consecutive days. In one condition, participants were asked to write in detail about an intensely positive experience, whereas in the other condition, participants wrote about more mundane topics (e.g. plans for the rest of the day, a description of the shoes they were wearing, or a detailed description of their bedroom). Trait anxiety, perceived stress and physical symptoms were measured at baseline and four weeks post-completion of the writing tasks. State anxiety was measured immediately before and after writing on each of the days. Irrespective of condition, writing was associated with decreased state anxiety, trait anxiety and physical symptoms. The positive, but not the neutral writing condition was associated with a reduction in perceived stress. Taken together, these findings provide empirical evidence that writing tasks can promote psychological and physical wellbeing. Our future work will incorporate a 'free writing' condition, where participants can write about a topic of their choosing, which is more in keeping with typical mindful writing practice.

## Poster 9.

### Creativity, Mindfulness and Personality – Is there a link?

Heather McDonald<sup>1</sup>, Mariam Babunashvili<sup>1</sup>, Ariane Finn<sup>1</sup>, Paul Chadwick<sup>1</sup> and Elena Antonova<sup>1</sup>

<sup>1</sup>King's College London

**BACKGROUND:** People with schizotypal traits show heightened creativity, with positive dimension driving this relationship. However, suspiciousness, an aspect of positive schizotypy, is a high-risk factor for conversion to schizophrenia. We found that mindfulness practitioners have higher magical thinking, another aspect of positive schizotypy, but lower suspiciousness than the general population, suggesting that mindfulness could mitigate the risks of suspiciousness whilst preserving aspects of positive schizotypy linked with creativity. The main aims of the present study were to i) investigate the relationship between the individual aspects of positive schizotypy and creativity; and ii) explore the role of dispositional mindfulness in this relationship. **METHODS:** One hundred and seventeen healthy participants (M = 27 years; SD = 9.5; Male = 30, Female = 87) completed the Schizotypal Personality Questionnaire, the Experience of Creativity Questionnaire, and the Five Facet Mindfulness Questionnaire. A sub-sample of 40 participants completed two lab-based creativity tasks. **RESULTS:** Positive Schizotypy had significant positive relationship with the self-assessment measure of creative experience, but not the objective creativity tasks. Unusual perceptions, ideas of reference, and suspiciousness, but not magical thinking, significantly correlated with subjective creativity. Dispositional mindfulness showed a trend for a positive relationship with magical thinking, and had a significant negative association with suspiciousness and ideas of reference. There were no significant relationships between dispositional mindfulness and any measures of creativity. **CONCLUSION:** Positive schizotypy was positively associated with subjective experience of creativity, but not the objective measures of creative output; however, magical thinking was not the driver of this relationship. As anticipated, suspiciousness was negatively associated with dispositional mindfulness, warranting the application of mindfulness-based interventions for mitigating the risk of positive schizotypy.

# Directions for the social events.

## Conference drinks at Bacchus:

42-48 High Bridge, Newcastle, NE1 6BX

## Conference dinner at the Pitcher and Piano at 19:00:

108 Quayside, Newcastle, NE1 3DX

