2nd Psychology Postgraduate Research Conference

Co-organizers:

School of Education, Language, and Psychology, York St John University &
Department of Psychology, University of York

Friday, 23rd June 2023, York St John University

Talks
Room: De Grey 017

Arrivals and Coffee: 09:00 – 09:30

09:30
Welcome
Lorna Hamilton, Associate Head (Psychology), York St John University

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Session One: Perception 09:30 – 10:45
Chairs: Dan Rogers & Federico Segala

09:30 - 09:45
Kirralise Hansford, Catherine Preston, Daniel Baker & Kirsten McKenzie
The addition of non-naturalistic auditory input during resizing illusions

09:45 - 10:00
Callum Glenn & Matt Coxon
Investigating the relationship between presence in virtual reality and temporal recalibration

10:00 - 10:15
Josephine Flockton, Daniel Baker & Catherine Preston
Tapping into ASMR: the neural correlates of autonomous sensory meridian response

10:15 - 10:30
Erin Warden-English, Antony Morland & Heidi Baseler
Characteristics of medium-term red and blue chromatic adaptation

10:30 - 10:45
Bartholomew Quinn, Tim Andrews & Mike Burton
Idiosyncratic patterns of inter-hemispheric connectivity between face and scene regions in the human brain

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Coffee Break: 10:45 – 11:15
Room: De Grey 016

Session Two: Cognition 11:15 – 12:30
Chair: Cátia Oliveira

11:15 – 11:30
Noel Lam, Emma Hayiou-Thomas & Lisa Henderson
The time-course of semantic contributions to word learning in adults and children

11:30 – 11:45
Isabelle O'Halloran, Jelena Mirković & Nicola Savill
Grammar learning in adults: a role for offline consolidation and prior knowledge

11:45 - 12:00
Boon Kheng Toh, Ana Vivas & Fiona McNab
Selective attention and distraction in working memory

12:00 - 12:15
Shaima Showaiter, Fiona McNab & Ana Vivas
Investigating distraction in working memory in patients diagnosed with schizophrenia and controls in Bahrain

12:15 – 12:30
Scarlett Syme & Rob Jenkins
AI escape

Lunch & Posters: 12:30 – 14:00

Room: Creative Centre Atrium
A buffet lunch will be provided.
Poster presenters will be available at their poster from 13:00 – 14:00.

Session Three: Mental Health & Neurodiversity 14:00 – 15:15
Chair: Alex Bond

14:00 – 14:15
Trish Chinzara, Hannah Hobson & Emma Hayiou-Thomas
The relationship between alexithymia and emotional expressiveness

14:15 – 14:30
Jessica Duffy, Jennifer Boland, Scott Cole & Divine Charura
Exploring the relationship between anxiety and feared future self-thoughts: mechanisms and interventions

14:30 - 14:45
Victorina Clegg, Amy Cantwell & Stephanie Petty
What are autistic rituals and routines?

14:45 – 15:00
Sue Mesa, Lorna Hamilton & Trish Hobman
AIMSS: Autism Inclusive Mainstream Secondary Schooling

15:00 – 15:15
Amy Victoria Wainwright & Cristiana Duarte
Using a compassion-based intervention to support the wellbeing of caregivers/ family members of individuals with eating disorders: A mixed method RCT

Coffee Break: 15:15 – 15:45
Room: De Grey 016

Session Four: Lifespan Development 15:45 – 16:45
Chair: Rob Brennan

15:45 – 16:00
Lydia Munns & Catherine Preston
The effects of pregnancy bodily experience on mother-infant outcomes

16:00 – 16:15
Charlotte Knapper, Bailey House & Katie Slocombe
Does imitation in infancy and early childhood explain conformity to social norms in early childhood?

16:15 - 16:30
Sophie Marshall, Bailey House & Katie Slocombe
The emergence of sensitivity to normative expectations

16:30 – 16:45
Ekaterina Yurtaeva & Divine Charura
Intercultural love and romantic relationships

Conference Close: 16:45

Closing remarks
Lisa Henderson, Head of Department of Psychology, University of York

Drinks Reception: 17:00 – 18:00
Room: De Grey 016

Continuing Discussions at the Pub
Eagle & Child, 9 High Petergate, York YO1 7EN (serves food)

Posters

Room: Creative Centre Atrium, 12:30-14:00

Poster presenters:
Please **set up your posters in the morning 9:00-9:30** (before Session One) **or 10:45-11:15** (during the morning coffee break) and **pick them up straight after the last talk (17:00)**. Each poster board is marked with a number that corresponds to the poster number in the list below. Please stand with your poster from 13:00 to 14:00.

1. **Alex Carter** & Alex Wade
   Studying colour using steady-state EEG

2. **Adam Curtis** & Aidan Horner
   The temporal dynamics of schema-dependent memory encoding

3. **Chen Chen**, Beth Jefferies & Katya Krieger-Redwood
   The neural basis of flexible semantic cognition revealed by contrasting reading and listening with autobiographical memory retrieval

4. **Emily Rice**, Sven Mattys, Angela de Bruin & Sarah Knight
   Selective auditory attention in native and non-native listening

5. **Debra Fayter**, Nicola Cutting & Ruth Lee
   Children's development of Theory of Mind: tracing the journey of bilingual and monolingual children

6. **Vanessa Keller**, Gareth Gaskell & Scott Cairney
   Predictability effects on word-meaning priming and incidental memory

7. **Parthena Evgeniadou**, Silvia Gennari & Aristea Ladas
   Individual differences when measuring for executive functions, and the role of dopamine activity

8. **Irena Danilovska &** Nick Barraclough
   "How do the successful entrepreneurs succeed?" Determining the key behavioural and neural markers of the successful startup founders

9. **Ramya Balakrishnan** & Beth Jefferies
   Thinking beyond lesion location: using principal gradient analysis to characterise the changes in intrinsic functional connectivity caused by stroke

10. **Eleanor Burton**, Jennifer Boland & Matthew Coxon
    The effect of mental imagery on predictions of behavioural engagement in depression

11. **Hannah Kirsop**, Lisa Henderson & Scott Cairney
    Sleep, executive control and mental health

12. **Aaron Laycock**, Cade McCall & Harriet Over
    Complex decision-making in threatening environments

13. **Ewan Murray**, Silke M. Göbel & Aidan Horner
The relationship between procedural complexity in mathematics and spaced retrieval practice

14. **Lisa Parfitt**, Nicola Cutting, Brett Heasman & Natalie Smith
Innovation on the spectrum: the process and performance of tool innovation for both neurotypical and autistic children

15. **Michele Deakin**, Stephanie Petty, Lorna Hamilton & Brett Heasman
Psychological interventions for wellbeing: a systematic review focused on adults with Autism Spectrum Disorder (without intellectual impairment)

16. **Shauna Lambarth**, Stephanie Petty & Lorna Hamilton
Emotional distress described personally by autistic adults: mixed-method analysis of blog data

17. **Luciana White,** Paige Davis & Stephanie Petty
Conceptualising loneliness and connection in adolescence from an autistic point of view: a systematic review

18. **Kathryn Lewis**, Lorna Hamilton & Jonathan Vincent
Using creative research methods to engage neurodivergent children and young people in research

19. **Rebecca Robinson**, Divine Charura & Brett Heasman
A thematic analysis of client understanding and experiences of flow within the therapeutic relationship for psychological trauma

20. **Lauren Charters,** Elena Geangu & Quoc Vuong
The role of interoception and context in empathetic responses in naturalistic environments in infants

Conference location

York St John University
Lord Mayor's Walk
York, YO31 7EX
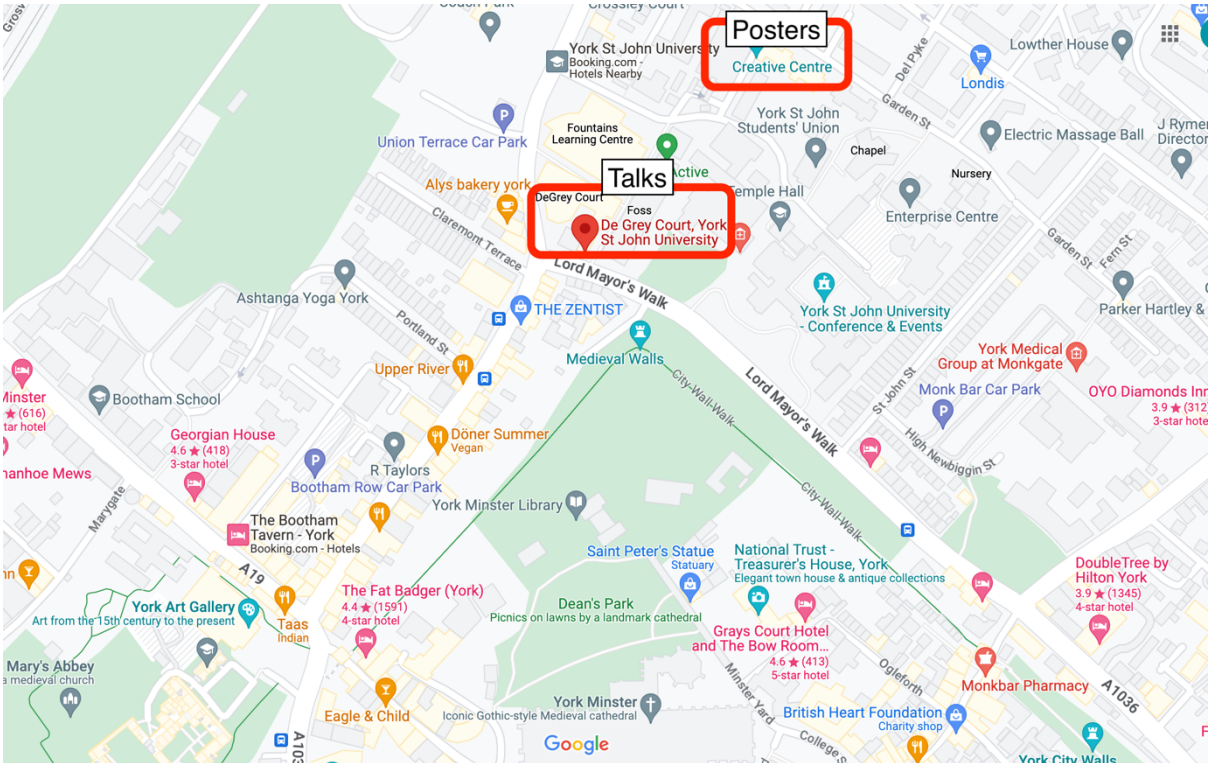
Abstracts

Talks

Session One: Perception 09:30 – 10:45

Presenter: Kirralise Hansford
Affiliation: University of York
Supervisor(s): Catherine Preston, Daniel Baker, Kirsten McKenzie
Title: The addition of non-naturalistic auditory input during resizing illusions
Abstract: Background: Bodily resizing illusions typically use visual and/or tactile inputs to produce a vivid experience of one's body changing size. Naturalistic auditory input (input that reflects the natural sounds of a stimulus) has also been used and can increase illusory experience during the rubber hand illusion, whilst non-naturalistic auditory input can influence estimations of finger length. Aims: To utilise non-naturalistic auditory input during a hand-based resizing illusions using augmented reality, to assess whether the addition of auditory input would increase both subjective and objective experience of hand-based resizing illusions. Methods: 44 Participants underwent three conditions: no stretching, stretching without tactile feedback, and stretching with tactile feedback. Half of the participants had auditory input throughout conditions, whilst the other half did not. After each condition, participants were given one of three objective tasks: right-hand (stimulated) dot touch task, left-hand (non-stimulated) dot touch task and a ruler judgement task. Dot tasks involved participants touching a virtual dot, whereas the ruler task concerned estimations of the tip of their finger on a ruler, whilst the hand was hidden from view. Finally, participants completed a subjective questionnaire capturing illusion strength. Results: The addition of auditory input increased subjective experience of the stretching illusion for manipulations without tactile feedback but not for those with tactile feedback. No facilitatory effects of audio were found for objective data. Conclusions: Adding auditory input to illusory finger stretching increased subjective illusory experience without the need for tactile feedback, but did not affect objective measures of illusory experience.
Keywords: multisensory integration; illusory resizing; body schema/body image

Presenter: Callum Glenn
Affiliation: York St John University
Supervisor(s): Matt Coxon
Title: Investigating the relationship between presence in virtual reality and temporal recalibration
Abstract: The ability to integrate multiple senses into a unified percept enables rapid and accurate behaviour, allowing individuals to orient themselves in their surrounding environment (Stein & Meredith, 1990). However, the time window where multisensory information can be integrated, is known to differ between individuals (Stevenson et al., 2012) and recalibrate based on task demands (Mégevand, 2013). Maintaining consistency of multisensory information is an important underpinning of spatial presence (Wirth et al., 2007) within virtual reality (VR). Unlike in reality, VR presents multisensory information regarding the surrounding environment via speakers and 2D screens. Therefore, representations of the environment are generated much closer to the sensory receptors adjusting the perceptual demands. The aim of this research was to establish if an individual's ability to recalibrate their temporal binding window related to their feelings of presence within VR. It was expected that individuals who showed greater recalibration, would report feeling more present in a multisensory virtual environment.

Seventy participants took part in two multisensory integration tasks, before entering either a visual-only or audio-visual simulation. Participants provided self-report measures recording their feelings of presence on two questionnaires after their experience. The relationships between temporal recalibration derived from the integration tasks and presence scores were analysed using moderation analyses, with the presence of sound being the moderator. The results are discussed with relation to the underpinning theoretical model of spatial presence (Wirth et al., 2007) and potential future implications.

Keywords: multisensory integration; virtual reality; presence

Presenter: Josephine Flockton
Affiliation: University of York
Supervisor(s): Daniel Baker, Catherine Preston
Title: Tapping into ASMR: the neural correlates of autonomous sensory meridian response
Abstract: Autonomous Sensory Meridian Response (ASMR) is a sensory phenomenon, in which certain auditory stimuli elicit a pleasant tingling sensation, usually felt across the scalp and neck. Despite reportedly alleviating a range of issues like sleep disturbance, anxiety, and even chronic pain, little is understood about the neural mechanism behind ASMR. This study is the first part of a project that aims to assess physiological and neural responses to ASMR-inducing stimuli. Measures included heart rate, a novel piloerection (goosebump) analysis during the tingling sensation, along with a self-report questionnaire after the experiment, and the EEG recording of neural oscillations. Participants (N=64) listened to a range of sound stimuli known to induce ASMR in some people, alongside control stimuli that were not intended to elicit the response. They did this while reclining on a massage table, so that they were relaxed and so that they could lie, face up, with their neck over a viewing window in the table, through which a camera filmed the back of their necks without touching them, to collect video data for the piloerection analysis. Analyses are ongoing but results so far have shown that the control measures were successful in the avoidance of eliciting ASMR, that most participants did experience the phenomenon at some point when listening to the experimental stimuli, differences in participants' brain wave frequencies (theta, alpha, and beta) existed when listening to ASMR versus control stimuli, and that there is now a rich pool of data available for analysis.

Keywords: ASMR; EEG; piloerection

Presenter: Erin Warden-English
Affiliation: University of York
Supervisor(s): Antony Morland, Heidi Baseler
Title: Characteristics of medium-term red and blue chromatic adaptation
Abstract: Long-term chromatic adaptation may involve global renormalisation of cone signals, resulting in an enduring shift of unique hues by around 5nm (Neitz et al. 2002, Neuron, 35(4), 783-792). We sought to determine what length of time was sufficient to induce a long-term shift in unique yellow settings, and whether adaptation strength was dependent on the colour of adaptation. Participants made unique yellow wavelength settings after adaptation to red or blue filtered light. Settings were made using the method of adjustment of a small (.67° x 1.33°) rectangle on a Wright colorimeter. Participants were adapted for 15 minutes, 1 hour, or 4 hours, and their unique yellow settings were recorded before adaptation, and twice after adaptation. Our independent variables were therefore: colour of filter (red or blue), duration of adaptation (15, 60, or 240 minutes), and measurement time (pre-adaptation 5-minutes post-, and 60-minutes post- adaptation). A three-way mixed ANOVA detected a significant three-way interaction. This was driven by an increasingly strong effect of adaptation duration on 5-minute post-adaptation settings for the red filter condition, up to a change of 4nm, but not for the blue filter condition.

Irrespective of colour or duration of adaptation, unique yellow settings returned to the pre-adaptation baseline when measured at 60-minutes post-adaptation. This suggested that 4 hours adaptation was not sufficient to induce a long-term change in unique yellow settings, but the short-term effect of adaptation on unique yellow settings did follow a different pattern at different durations of adaptation when adapting to red versus blue.

Keywords: colour vision; chromatic adaptation; long and short-term adaptation

Presenter: Bartholomew Quinn
Affiliation: University of York
Supervisor(s): Tim Andrews, Mike Burton
Title: Idiosyncratic patterns of inter-hemispheric connectivity between face and scene regions in the human brain

Abstract: Neuroimaging studies have revealed a network of regions in the occipital and temporal lobes of the human brain that respond selectively to faces and scenes. Models have largely focused on the importance of functional connectivity between regions of a network within each hemisphere (intra-hemispheric), but ignored the role of functional connectivity between hemispheres (inter-hemispheric). In the present study, we used three existing datasets of fMRI recordings taken during movie watching to investigate intra-hemispheric and inter-hemispheric connectivity in the face, scene, and early visual networks. We found that inter-hemispheric connectivity between corresponding regions was typically greater than intra-hemispheric connectivity in the face and scene networks within individual participants. For example, for the face network, the connectivity between the rFFA and lFFA was greater than between the rFFA and rOFA. This contrasted with the early visual network (V1 – V3), where intra-hemispheric connectivity was predominantly higher than inter-hemispheric connectivity. Next, we compared inter-hemispheric and intra-hemispheric connectivity across different participants. In contrast to the within-participant analysis, between-participants, the difference between inter-hemispheric and intra-hemispheric connectivity was significantly attenuated. This suggests that inter-hemispheric connectivity between regions in the face and scene networks is specific to an individual. These findings raise the possibility that idiosyncratic differences in inter-hemispheric connectivity may explain individual differences in the perception of faces and scenes.
Keywords: inter-hemispheric connectivity; scene perception; face perception

Session Two: Cognition 11:15 – 12:30

Presenter: Noel Lam
Affiliation: University of York
Supervisor(s): Emma Hayiou-Thomas, Lisa Henderson
Title: The time-course of semantic contributions to word learning in adults and children

Abstract: Contemporary models of memory consolidation and word learning posit that semantic information consistent with existing knowledge supports learning. However, it is less clear when semantic factors exert their contributions (i.e., at encoding or consolidation). We examined the timescale of semantic influence on learning novel word forms in adults and typically developing children aged 9 to 11 using three training conditions: (i) real but rare animals (with illustrated picture referents) that are highly linkable to familiar animals, (ii) fictitious animals (also with pictures) with low linkage to familiar animals, and (iii) animal names that were associated with coloured pattern/symbol referents (i.e., with no semantic information about the animal). Knowledge of word forms and meanings was examined immediately after learning, and after 1-day and 1-week delays. Children's word form recall improved significantly across sessions, potentially because of repeated testing and off-line consolidation.

Consistent with the Matthew Effect and previous findings, children with better receptive vocabulary showed better recall performance overall; they also benefited more from learning new animal names that were closely linked to existing knowledge. Consistent with previous findings demonstrating developmental differences, children also showed greater improvements across test sessions than adults. These results support models that argue for immediate benefits of semantics, but highlight the need for these models to incorporate developmental and individual differences that moderate this benefit.

Keywords: word learning; semantics; individual differences

Presenter: Isabelle O'Halloran
Affiliation: York St John University
Supervisor(s): Jelena Mirković, Nicola Savill
Title: Grammar learning in adults: a role for offline consolidation and prior knowledge
Abstract: Consolidation processes that occur during sleep have been shown to play an important role in the long-term retention of new words (e.g., Dumay & Gaskell, 2007; Schreiner & Rasch, 2015). However, the contribution of offline consolidation to grammar learning is less clear, suggesting that it may influence grammar learning differently to word learning (Mirkovic & Gaskell, 2016). Moreover, the consolidation rate of new linguistic knowledge is likely also influenced by its dependence on prior linguistic knowledge (McClelland, 2013). Here we present a study that examines the contributions of sleep and wake-related consolidation to learning novel grammatical regularities that are more or less dependent on prior linguistic knowledge. Participants were trained and tested on a novel language, consisting of novel two-word phrases (e.g., tib viffeem) referring to a familiar picture or entity (e.g., waitress). Systematic phonological properties of the novel words (tib, eem) provided a cue to grammatical categories, and varied in the extent to which they related to existing knowledge. Participants were trained either in the evening or in the morning and tested immediately, and then again after a 12-hour interval including sleep or wake, and then again 1 week later, assessing long-term consolidation. Participants were trained and tested online. Recall, recognition, and online language use were measured at each time point to test learning of trained regularities and generalisation of the trained regularities to new items. Findings will be discussed.

Keywords: consolidation; prior knowledge; generalisation

Presenter: Boon Kheng Toh
Affiliation: University of York
Supervisor(s): Ana Vivas, Fiona McNab
Title: Selective attention and distraction in working memory
Abstract: Previous research in Working Memory (WM) and Selective Attention (SA) have mostly remained segregated, although there are similarities and overlaps between these two theoretical constructs. This study aimed to investigate if selective attentional processes (facilitation and inhibition) contribute to distractor filtering during the encoding of information into WM. To do so, a dual-task paradigm was employed, which combined location-based and feature-based attentional priming tasks with a WM task. 52 adult participants were recruited. In the priming tasks, results showed significant facilitation effects (faster response times for previously encoded/attended target locations and features) in both tasks, and across time intervals (1100 and 1800 ms). However, there was no evidence for inhibitory effects in any of the tasks and intervals. Furthermore, there were no statistically significant correlations between the magnitude of facilitation and inhibition effects and WM capacity. These findings do not support the hypothesis that SA processes during encoding contribute to WM capacity, at least in the particular paradigm and tasks employed.

Keywords: working memory; distraction; selective attention

Presenter: Shaima Showaiter
Affiliation: University of York
Supervisor(s): Fiona McNab, Ana Vivas
Title: Investigating distraction in working memory in patients diagnosed with schizophrenia and controls in Bahrain
Abstract: Research shows that the ability to hold information in mind for a short time (working memory) is reduced in patients with Schizophrenia. It is not clear why this is. This project aims to identify which basic cognitive / attentional mechanisms are affected and how these might contribute to deficits in working memory performance. The findings will also further our understanding of the relationship between attention and working memory capacity; two fundamental aspects of cognition. Thirty patients diagnosed with Schizophrenia and thirty healthy controls will perform tasks that will measure their working memory capacity under three different conditions (no distraction –ND-, encoding distraction –ED- and delay distraction –DD-). The working memory capacity task will involve being presented with a visual stimulus of targets and distractors to measure the participants' ability to remember the positions of the targets and ignoring the distractors. Participants will also undergo a neuropsychological assessment to measure inhibitory control ability. Furthermore, comparisons between patients with different symptomologies as well as on different medications will be explored.
Keywords: schizophrenia; working memory; distraction

Presenter: Scarlett Syme
Affiliation: University of York
Supervisor(s): Rob Jenkins
Title: AI escape
Abstract: What would convince you to release a potentially dangerous superintelligent AI? One proposed method for developing AI safely is to confine the AI to a 'box'—unconnected to the internet and able to communicate via a text channel only. The concern then is that any sufficiently advanced intelligence could persuade a human user to release it. How realistic is this concern? The current study compares the impact of different persuasive interventions on decision making in an AI Box scenario. We expected that (i) pre-intervention release rates (RR) would be low, (ii) introducing persuasion tactics would alter RR, and (iii) the type of technique used (e.g. threats or promises) would influence the direction of this change. Specifically, it was hypothesised that introducing a metacognitive element would reconfigure the perceived risk across potential decision outcomes, and increase RR as a result. Across five studies, it was found that average pre-intervention RR exceeded 20%, and some tactics even reduced this. However, the most persuasive tactic was a combination of promising reward, threatening punishment and metacognition, which increased RR from 24% to 40%. In almost every instance of including a metacognitive element, RR increased, supporting the hypotheses. These results further support the critique of confinement methods, as: (i) a significant number of gatekeepers do not require persuasion to release an ASI; (ii) those that do are persuadable (even by human-level intelligence); and (iii) utilising psychological biases can reconfigure perceived risk.
Keywords: existential risk; artificial intelligence; confinement problem

Session Three: Mental Health & Neurodiversity 14:00 – 15:15

Presenter: Trish Chinzara
Affiliation: University of York
Supervisor(s): Hannah Hobson, Emma Hayiou-Thomas
Title: The relationship between alexithymia and emotional expressiveness

Abstract: Alexithymia is a subclinical condition characterised by a deficit in being able to communicate and identify one's emotions. Previous research suggests a link between high levels of alexithymia and language impairment (Hobson et al., 2019). The aim of this work was to investigate the association between alexithymic traits and verbal emotional expressiveness in the general population, using a natural language task. Forty-two healthy participants completed the Toronto Alexithymia Scale-20 to assess alexithymia and an autobiographical structured interview. Lexical content analysis was used to examine linguistic patterns and their association with alexithymia. Alexithymia was found to be significantly correlated with language skills as assessed by the Communication Checklist (Self-Report; Bishop et al., 2019) as well as overall verbal expressiveness. With respect to emotional language use, we found that there was no association between alexithymia and the frequency of use of emotion-words per se, but there was a specific and strong relationship with the diversity of negative emotion words produced. This may suggest that individuals with higher levels of alexithymia may have reduced access to diverse affective vocabulary, especially for expressing negative emotions.
Keywords: emotions; alexithymia; language

Presenter: Jessica Duffy
Affiliation: York St John University
Supervisor(s): Jennifer Boland, Scott Cole, Divine Charura
Title: Exploring the relationship between anxiety and feared future self-thoughts: mechanisms and interventions
Abstract: Introduction: Although research has explored the relationship between anxiety and the self-concept, less is known about how anxiety relates specifically to thoughts about the feared-future self. Two studies will be discussed with the aim of exploring 1) the relationship between anxiety and the characteristics of feared possible selves- mental representations of feared future states 2) the mechanism through which the characteristics of feared possible selves maintain anxiety 3) a potential intervention designed to reduce anxiety through targeting the characteristics of feared possible selves. Method: Anxiety was assessed with the Generalized Anxiety Disorder-7. Depression was measured to control for the overlap between anxiety and depression. Participants recorded feared possible selves and rated their threat representations on several characteristics. Results: Across two studies anxiety was significantly related to the clarity of feared possible selves. Evidence was found for a potential mechanism through which clarity could maintain anxiety, namely by contributing to a negative perception of the self in the present and preliminary evidence was found for a potential intervention designed to reduce anxiety by improving the clarity of positive future self-thoughts. Limitations: The present studies used a measure of symptom severity rather than clinical diagnoses of anxiety and depression. Also, specific aspects of each study reduced the generalisability of the findings (e.g., high student sample). Conclusion: The results highlight the importance of self-related cognition in the development and maintenance of anxiety and suggest that the clarity of negative future self-thoughts may be an important target for interventions aimed at reducing anxiety.
Keywords: anxiety; self-concept: feared possible selves

Presenters: Victorina Clegg, Amy Cantwell
Affiliation: York St John University
Supervisor(s): Stephanie Petty
Title: What are autistic rituals and routines?
Abstract: Current academic literature shows that rituals and routines have been viewed predominantly through a deficit lens, whereby these behaviours are used to separate people from a neurotypical majority and evidence disorder. Notably, there is no static definition of autistic rituals and routines despite them being central to diagnosis and personal understanding of what autism is.

Much research excludes the autistic voice. This body of research approaches the following question from multiple directions: what are autistic rituals and routines? The work provides a definition, specific examples, autistic qualifiers, and an overview of motivations, functions and personal meanings of autistic rituals and routines. A systematic literature review of academic literature and clinical assessment tools was conducted, utilising constructivist grounded theory to identify how autistic adolescents' rituals and routines have been characterised. Nineteen full text articles were synthesised. A second study applied systematic review methods and corpus-based and meta-ethnography analyses to blog data, written by autistic adults. Fifty-eight blog authors contributed. Data analysis is ongoing. Preliminary results show that rituals and routines are meaningful when described by autistic people, and provide a repertoire of valuable coping solutions, including immersion in a more comfortable habitat with reduced planning, social and sensory demands. When authored by caregivers, clinical and academic professionals, the same behaviours became medicalised and given a negative value judgment. The discussion highlights how the same research question can be explored from different perspectives, with important consequences for what is then privileged in this understanding.

Keywords: autistic rituals; routines

Presenters: Sue Mesa
Affiliation: York St John University
Supervisor(s): Lorna Hamilton, Trish Hobman
Title: AIMSS: Autism Inclusive Mainstream Secondary Schooling
Abstract: A key development in adolescence is the construction of identity; for autistic young people integrating the idea of 'being autistic' forms part of this process. I will summarise a study which explored autistic young people's identity development from a contexualist perspective, foregrounding their experiences within mainstream educational settings (Mesa and Hamilton 2022). A qualitative methodology was used, with semi-structured interviews conducted annually with fourteen autistic young people, their parents, and teachers between school years 6 and 9. The data was analysed using inductive thematic analysis. Young people identified feeling different from their neurotypical peers and their acceptance of their diagnosis changed over time as they managed their developing personal and public identities. In pursuit of being treated 'normally,' many camouflaged their differences at school, which sometimes involved opting out of school support. Adults described their understandings of autism and discussed the responses of others in the school environment. I will then outline how I am extending this for my PhD. In study 1, I am interviewing young people from the longitudinal study, as they finish secondary school. Narrative analysis will be used to generate individual stories of school experiences and how these are integrated within an evolving sense of self. These stories will then inform a subsequent participatory study, in which a whole school intervention will be co-produced, aiming to improve understandings of the autistic experience and perceived barriers to school participation. I envisage this work will support schools to provide a better person-environment fit for autistic young people.
Keywords: autism; education; identity

Presenters: Amy Victoria Wainwright
Affiliation: York St John University
Supervisor(s): Cristiana Duarte
Title: Using a compassion-based intervention to support the wellbeing of caregivers/ family members of individuals with eating disorders: A mixed method RCT
Abstract: Caregivers/family members supporting their loved one with an eating disorder report significant difficulties with their own wellbeing including high levels of self-criticism.

The current study examined the effectiveness of a 10-week compassion-focused intervention aimed at increasing compassion and at reducing caregivers' psychological distress, self-criticism shame and guilt. Participants were randomly assigned to the compassion focused intervention (n=21) or wait-list control (n=18) conditions and completed self-reported measures of compassion (self and others), fears of compassion, shame and guilt, self-criticism and psychological distress at pre-intervention and post-intervention. The intervention was delivered online over a video conference platform in a group format. At post-intervention participants in the intervention group completed opened ended questions relating to their experiences of being in the group. The results showed that at post-intervention, participants in the compassion focused intervention compared to waitlist control had significantly reduced levels of self-criticism, shame and guilt, fears of compassion for self- and significant increases in scores for self-compassion. There were no changes in scores for receiving compassion from others. Reflexive thematic analysis of the post-intervention feedback revealed themes that where consistent with the quantitative findings. Results suggested that the compassion focused intervention activated soothing and affiliative experiences within the group, that led to self-directed warmth and soothing but that caregivers do not perceive society to extend these experiences to them and may be blocked by caregivers. The results of this first RCT exploring a compassion focused group intervention for caregivers/family members of individuals with eating disorders shows promise for supporting caregivers with their own wellbeing.

Keywords: caregivers/ family members; compassion-focused therapy; eating disorders

Session Four: Lifespan Development 15:45 – 16:45

Presenter: Lydia Munns
Affiliation: University of York
Supervisor(s): Catherine Preston
Title: The effects of pregnancy bodily experience on mother-infant outcomes
Abstract: Background: Antenatal attachment (AA) is linked to positive outcomes, like healthier pregnancy behaviours, stronger postnatal attachment, and reduced depression risk. Our bodily experience, including appearance satisfaction and interpretation of internal signals (interoceptive sensibility), intuitively connects to AA. Mixed results in the literature suggest complex relationships, necessitating a broader investigative approach. Aims and objectives: We aim to examine the effects of pregnancy bodily experience (body satisfaction and interoceptive sensibility) on multiple mother-infant outcomes, including AA. It is hypothesised that poor body satisfaction and interoceptive sensibility during pregnancy will have negative impacts on these outcomes. Methods: Cross-sectional online survey data was collected from individuals at various gestations throughout pregnancy as part of a larger longitudinal study (N=253, mean age=32). We analysed validated measures of pregnancy body satisfaction, interoceptive sensibility, AA and mood, as well as attitudes concerning parental ambivalence and desire for touch. Linear regressions and a network analysis were used to assess our hypotheses, the latter allowing for a more exploratory approach to understanding the importance of the bodily experience during pregnancy. Results: Multiple regressions found low body satisfaction predicts higher levels of anxiety, depression, interoceptive sensibility and AA. A network analysis revealed relationships between body satisfaction during pregnancy and mother-infant outcomes, including depression and AA. Conclusions: Our results highlight the importance of the interplay between internal and external bodily cues for maternal wellbeing and AA. Understanding the impact of the pregnancy bodily experience can help identify at-risk individuals and inform interventions.

Keywords: body satisfaction; perinatal mental health; antenatal attachment

Presenter: Charlotte Knapper
Affiliation: University of York
Supervisor(s): Bailey House, Katie Slocombe
Title: Does imitation in infancy and early childhood explain conformity to social norms in early childhood?
Abstract: To be accepted as members of their social group, children must follow their society's social norms (i.e. unwritten rules of social behaviour), and some have proposed that children's conformity to social norms develops out of their early-emerging ability to imitate others. Previous research has found that imitation predicts compliance in children younger than age two, but this research is limited to Western societies, and doesn't explore whether imitation predicts conformity after age 3, when children's understanding of norms begins to develop. Here, we investigate the link between imitation and conformity to social norms in children aged 4-5, across a diverse sample of children in the UK and Uganda. We measured children's imitation ability at age 1.5 years and 4-4.5 years and their tendency to conform to novel game rules at age 4-4.5 years. We predicted that children who were more likely to imitate others would also be more likely to conform to novel game rules. Contrary to these predictions, conformity was not predicted by children's imitation at either 1.5 or 4 years of age, but was instead predicted by children's general cognitive abilities, particularly in Uganda. Our results suggest that conformity to norms such as game rules is unlikely to be supported by children's imitation abilities, and that the role of other cognitive abilities should be explored. Our findings also suggest that the emergence of conforming behaviour is not the same across the UK and Uganda, highlighting the importance of further research with non-Western societies.
Keywords: social norms; imitation; conformity

Presenter: Sophie Marshall
Affiliation: University of York
Supervisor(s): Bailey House, Katie Slocombe
Title: The emergence of sensitivity to normative expectations
Abstract: Social norms are thought to be an important motivator of human prosociality. We follow social norms by attending to our beliefs about what other people approve of (i.e. normative expectations), and then trying to avoid eliciting others' disapproval. In practical terms, this means that we ought to act self-interested when doing so will not violate others' expectations that we should be prosocial. This could happen (i) when others don't seem to want us to act in any particular way, or (ii) when others want us to be prosocial but are not observing what we do. Despite being an integral aspect of normative behaviour, little is known about how this kind of sensitivity to social approval develops. The current study employs a novel sharing paradigm which explores sensitivity to normative expectations in young children from the UK and Uganda. The within-subjects paradigm comprises four modified conditions of a dictator game, across which we vary both (i) the experimenter's approval of sharing generously, and (ii) whether the participant is observed. Preliminary results indicate a cultural difference, with Ugandan children displaying sensitivity to normative expectations, unlike children from the UK. Plausible explanations for this cultural difference relate to sharing norms, parenting and socialisation practices and cultural tightness-looseness.
Keywords: social norms; developmental psychology; reputation management

Presenter: Ekaterina Yurtaeva
Affiliation: York St John University
Supervisor(s): Divine Charura
Title: Intercultural love and romantic relationships

Abstract: Despite the growing evidence that the modern world is more diverse and so is the nature of relationships that present in therapy, there remains paucity of empirical evidence on how cultural differences impact those in intercultural romantic ties. The present study is an extension of the comprehensive scoping review where intercultural romantic relationships were found to face an additional layer of challenges and complexities that have to be recognised in therapy. The present research aims to expand the current understanding of the role of culture in functioning of intercultural romantic relationships from the perspective of those involved in the relationships of this kind. We used a qualitative methodology informed by the social constructionist epistemology that allowed us to be reflexively aware of the role the sociocultural context plays in the phenomenological experiences of romantic partners. Semi-structured interviews were conducted with 28 individuals who self-identified as having experience of being in a romantic relationship with an individual representing a different national, racial, ethnic, language and/or religious background. The interview data was analysed using reflexive thematic analysis. The findings demonstrated that culture is an important dimension of living that not only introduces the ground for differences between partners, but also intersects with other aspects of social identity, such as sexuality and gender, creating conflict and requiring unique ways of coping. These findings are incorporated into the comprehensive model of intercultural relationship identity development that enriches the current understanding of the skills and practices that are important in working with intercultural romantic relationships in psychotherapy.
Keywords: intercultural romantic relationships; multicultural counselling competencies; relational competencies

Posters

Presenter: Alex Carter
Affiliation: University of York
Supervisor(s): Alex Wade
Title: Studying colour using steady-state EEG
Abstract: The eye has three cone types responsible for colour vision, with different response combinations allowing for perception of different colours. Colour space can be represented using three axes; luminance, red/green (RG) and blue/yellow (BY). Normally, each eye sees the same colour, but when different colours are presented to different eyes, the brain must combine them. We studied whether the rules for combination change depending on the axis and pattern of the stimulus. Using EEG, 12 participants were presented with circular contrast-reversing flicker stimuli alternating across luminance, RG or BY. Stimuli were either disks or gratings, and were presented to the left eye alone at F=5Hz, the right eye alone at F=7Hz or to both eyes simultaneously at those frequencies. In monocular conditions, there was a large response at 2F. In binocular conditions, there was a large suppression of the response at these frequencies, but an increased response at 'intermodulation' frequencies (sums and differences of the inputs - for example, 2Hz). This effect depended on colour axis, spatial frequency and brain region. The biggest effect was seen in V1, V3a, LOC and MT, with the largest suppression in V1 suggesting that interaction of eye inputs starts as early as V1. Additionally, intermodulation was more prominent for low spatial frequency in the RG and BY conditions, but not for luminance conditions. Overall these findings demonstrate that binocular steady-state EEG is a powerful tool for exploring the processing of chromatic information in the human brain.
Keywords: colour, EEG, stereopsis

Presenter: Adam Curtis
Affiliation: University of York
Supervisor(s): Aidan Horner
Title: The temporal dynamics of schema-dependent memory encoding
Abstract: Memory schemas are associative knowledge structures that represent statistical regularities across multiple episodes. Research suggests that experiences that are either highly congruent or highly incongruent with our existing schema tend to be better remembered that experiences that are unrelated to such knowledge. Two core brain regions have been associated with the generation of these schema-effects: the hippocampus (HPC) and the ventromedial prefrontal cortex (vmPFC). Schema-effects are believed to arise due to predictive coding processes. As we experience an event the brain is continuously predicting what might happen next. It has been hypothesised that the affirmation or contradiction of these predictions is associated with activity changes within the HPC-vmPFC axis which subsequently results in the behavioural manifestation of schema-effects. Although evidence for this model exists, each stage of this process from ongoing neural predictions, to HPC-vmPFC activity changes, to behavioural schema effects is yet to be demonstrated. Here we address this issue by combining a sequence learning paradigm with magnetoencephalography (MEG) and multivariate pattern analysis. Crucially, the use of a sequence learning paradigm will add a temporal component to our schemas and the events they relate to which will more closely mimic the nature of real-world episodic memories. When combined with the fine temporal resolution of MEG, this will allow us to track ongoing neural predictions as an event unfolds and how they relate to HPC-vmPFC activity when an event either affirms or contradicts what was expected to occur.
Keywords: schema, memory, sequences

Presenter: Chen Chen
Affiliation: University of York
Supervisor(s): Beth Jefferies, Katya Krieger-Redwood
Title: The neural basis of flexible semantic cognition revealed by contrasting reading and listening with autobiographical memory retrieval
Abstract: Semantic cognition supports different thoughts and behaviours, for example, making sense of information from the external world, such as comprehension of what we are reading or listening to, but also generating thoughts and memories that are independent of the external environment. The ability to flexibly retrieve currently-relevant semantic information is critical for these different behaviours, but the neural basis of this flexibility is poorly understood. Using functional magnetic resonance imaging (fMRI), the current study aims to explore the neural basis underpinning the flexible semantic and episodic cognition, across states that are coupled and/or decoupled from the external environment. This study occurs across two consecutive days. On day1, participants generate personal memories linked to autobiographical cue words (e.g., gift) outside the scanner. On day 2, participants recall these memories from the cue word in the scanner, and also complete the reading and listening task, which involves comprehending written or spoken factual sentences about similar concepts. This task consists of the following conditions (1) read sentences; (2) listen to sentences; (3) retrieve personal memories while ignoring written sentences; (4) retrieve personal memories while ignoring spoken sentences; (5) retrieve personal memories (no conflicting sentence presented). This allows us to better understand how the brain processes semantic information, even when trying to ignore the external semantic input to focus on internal episodic memory retrieval. Preliminary results for this study will be presented.
Keywords: semantic cognition, reading, listening

Presenter: Emily Rice
Affiliation: University of York
Supervisor(s): Sven Mattys, Angela de Bruin, Sarah Knight
Title: Selective auditory attention in native and non-native listening
Abstract: Energetic masking (EM) refers to spectrotemporal overlap between a to-be-attended (target) speaker and competing speakers (maskers), which disrupts the target at the auditory periphery. Spatially separating target and masker reduces the amount of EM, making the target easier to understand. Although well-established for native listening (L1), this phenomenon is less well understood for non-native listening (L2). However, research suggests that L2 is impacted by EM more than is L1. To investigate this claim, 100 English-Spanish bilingual individuals completed a selective listening task: they heard simultaneous English and Spanish sentences, presented as collocated or dichotic (one signal in each ear), and focused on one, ignoring the other. Results showed that: (i) sentence transcription accuracy was poorer when attending to L2 compared to L1; (ii) accuracy was poorer when sounds were collocated than dichotic; (iii) the L2 penalty was larger in the collocated than dichotic condition. The results confirm L2 listeners' heightened sensitivity to EM, but they also show that this effect can be attenuated by spatial separation between the target and masker stimuli.
Keywords: energetic masking, selective listening, non-native listening

Presenter: Debra Fayter
Affiliation: York St John University
Supervisor(s): Nicola Cutting, Ruth Lee
Title: Children's development of Theory of Mind: tracing the journey of bilingual and monolingual children
Abstract: There is some evidence that children who speak more than one language have superior theory of mind (the ability to understand and to take into account another person's mental state) compared to monolingual children. Various explanations have been offered for this bilingual advantage including enhanced executive function, better metalinguistic awareness and greater sociolinguistic awareness (Yu et al., 2021). However, these explanations have not been tested simultaneously in a single study. While previous studies have focused on preschool-aged children, the current study will focus on the development of Advanced Theory of Mind (AToM): that is, the progression of mind reading skills that occur after the age of five, when children learn to interpret ambiguous social information and to reason about people's behaviour in social and moral contexts. Using a longitudinal design following children between school years 1 and 3 (ages 5 to 8), this study will assess the relative contributions of executive function, metalinguistic awareness and sociolinguistic awareness to trajectories of AToM (as measured using a range of established tasks and parent report measures) in 80-150 bilingual and monolingual children. Over 40 schools in Yorkshire have been contacted and invited to participate. Six schools have so far accepted and data collection has just begun.
Keywords: theory of mind, bilingualism, longitudinal

Presenter: Vanessa Keller
Affiliation: University of York
Supervisor(s): Gareth Gaskell, Scott Cairney
Title: Predictability effects on word-meaning priming and incidental memory
Abstract: Encountering a word in a sentential context that biases its interpretation towards a subordinate meaning aspect leads to that meaning subsequently being more easily accessible (word-meaning priming). Research suggests that these subtle adjustments in meaning dominance are supported by general episodic memory processes (Gaskell et al., 2019).

Therefore, we might expect the strength of word-meaning priming effects to be affected by factors that have been shown to affect learning in other episodic memory paradigms. In a pre-registered online experiment, we tested whether the relative expectedness of a word affects the strength of lexical-semantic updating. Additionally, based on recent models of episodic memory, we predicted better memory for incidental details of a context in which a highly unexpected word was encountered. We exposed participants to sentences containing a target word whose interpretation was biased towards a specific aspect of its meaning by the preceding context. The target words differed in how strongly they were expected, which was verified via prior norming experiments. Associate production and semantic relatedness judgement tasks were used to assess the strength of word-meaning priming. Contrary to our hypotheses, while relatedness judgements for primed words did reveal subtle shifts in meaning dominance, we did not find an effect of expectedness on word-meaning priming in either task. There were no memory benefits for contextual details surrounding unexpected words. Our findings suggest that the predictability of linguistic input might not influence lexical-semantic updating and incidental memory.

Keywords: prediction, word-meaning priming, episodic memory

Presenter: Parthena Evgeniadou
Affiliation: University of York
Supervisor(s): Silvia Gennari, Aristea Ladas
Title: Individual differences when measuring for executive functions, and the role of dopamine activity

Abstract: Ageing is a natural process of intense research interest, given that the global percentage of people considered to be older adults increases progressively. To better understand the neurochemical changes of normal ageing and its relationship to any possible cognitive decline, research of individual differences in ageing showed interest in the different variables, such as executive functions (EFs) and dopamine activity (DA), that seem to decline as we grow older. Reductions in dopamine activity occurs in ageing; and age-related decline in DA has been associated with cognitive functions and performance on executive functions. Therefore, dopamine represents a prime target to investigate the neurochemical basis of individual differences that influence EFs, in cognitive ageing. This study will examine EFs and the role of DA in healthy ageing, and whether individual differences such as bilingualism can contribute to prevent cognitive decline. Our goal is to establish whether differences in EFs across individuals relate to DA as measured by eye-blinks during rest. Eye-blink rates at rest can provide indirect information about striatal DA, and we are interested in establishing how this measure is related to cognitive functioning in ageing. We will examine performance in several tasks assessing cognitive functions that are sensitive to ageing such as the Trail Making Test (TMT), Digit Symbol Modalities test, Digit Span, Wisconsin Card Shorting Test (WCST) and Verbal Fluency. The study will also measure Eye Blink Rates using an Electrooculogram (EOG) or the Neurosky device. This project will contribute to the understanding of neurocognitive mechanisms underlying individual differences in healthy aging; therefore, adding to the existing debate of individual differences and cognitive flexibility in healthy aging and what could be the protective factors against cognitive decline.

Keywords: ageing, dopamine activity, eye blink rate, cognitive flexibility

Presenter: Irena Danilovska
Affiliation: University of York
Supervisor(s): Nick Barraclough
Title: "How do the successful entrepreneurs succeed?" Determining the key behavioural and neural markers of the successful startup founders

Abstract: Entrepreneurship liberalizes local economies, introduces new innovations and technologies, attracts FDI and VC investments, and creates new jobs with added value. The ability to identify advanced behavioural or neural markers of successful entrepreneurs could allow for more targeted support, increasing the efficiency of government and private sector support. Prior research has mainly focused on the entrepreneurs' personality traits whereas their behaviors might be more indicative of success. Yet, current studies have not been able to explain the specific mechanisms through which personality impacts entrepreneurial attitudes, actions, and behaviors. Therefore, I am first examining what are the fundamental behavioral characteristics underlying entrepreneurial success. According to my early findings, successful startup founders manifest 7 key behavioral traits. Second, I will explore the neural activity underlying their success by using EEG during VR scenarios, and identify those markers that provide additional information from self-report. Having in mind that one's psychophysiological and neuroscientific features cannot be consciously manipulated, this approach has potential to reduce false-positive rates of the self-report questionnaires, whilst increasing the specificity and accuracy of the overall results. In addition to individual behaviors, sociodemographic/environmental circumstances might also influence participants' level of success. Very large and representative sample will help minimize these confounding factors.
Keywords: neuroentrepreneurship, entrepreneurial success, EEG-VR

Presenter: Ramya Balakrishnan
Affiliation: University of York
Supervisor(s): Beth Jefferies
Title: Thinking beyond lesion location: using principal gradient analysis to characterise the changes in intrinsic functional connectivity caused by stroke
Abstract: Stroke has long been considered a focal disease with demarcated damage causing various neurological impairments. However, it is widely accepted that stroke not only causes local damage causing necrosis of brain tissue but also affects the large-scale brain networks resulting in dysfunction in areas connected remotely to the stroke lesion (Carrera et al., 2014). The location of stroke lesion alone cannot explain post-stroke cognitive dysfunction, instead the cognitive symptoms appear to be ascribable to dysfunction of cortical areas which are distant to stroke infarction. Hence, characterising the impact of structural damage on intrinsic functional networks in the brain with resting-state fMRI may provide a means of understanding post-stroke trajectories. Resting-state fMRI networks are captured by the principal gradient, which explains the most variance in resting-state connectivity patterns. This gradient captures the separation in connectivity between sensory-motor cortex and brain regions within the default mode network (DMN) associated with memory-based cognition (Margulies et al., 2016). It also captures a systematic ordering of large-scale networks along the cortical surface, from DMN, through the frontoparietal control system to the attention networks. Therefore, the gradient approach will be used to study the impact of stroke lesion on intrinsic networks and how the changes in intrinsic connectivity relate to diverse cognitive deficits. The ability of the PG to capture changes in large-scale functional organization makes this a powerful method for predicting functional deficits caused by stroke.
Keywords: post-stroke cognitive impairment, functional connectivity, principal gradient

Presenter: Eleanor Burton
Affiliation: York St John University
Supervisor(s): Jennifer Boland, Matthew Coxon
Title: The effect of mental imagery on predictions of behavioural engagement in depression
Abstract: As introduced by Beck (1987), the negative cognitive triad states that people with depression have a negative perception of the world, the self, and the future.

Succeeding research suggests that negative views of the future may be a central factor of depression (Roepke & Seligman., 2016). Previous research into prospective thinking has found that future event predictions can be improved using positive episodic future simulation (Boland et al., 2018). Therefore, the present study aims to extend upon previous research by investigating the effect of mental imagery on changes in predictions regarding behavioural engagement in people with different severities of depressive symptoms. A minimum of 72 participants will take part in a between-groups experiment where they will be randomly assigned to either an imagery intervention, whereby they are instructed to vividly imagine engaging with four chosen activities, or a verbal reasoning intervention whereby they are instructed to think about the reasons why they would engage in their four chosen activities. Activity predictions will be measured pre and post intervention. It is hypothesised that the greater the severity of depressive symptoms, the lower the motivation and perceived likelihood of carrying out activities. Following the imagery intervention, it is anticipated that there will be improved positivity regarding activity predictions in comparison to the verbal reasoning condition.
Keywords: negative cognitive triad, prospective thinking, mental imagery

Presenter: Hannah Kirsop
Affiliation: University of York
Supervisor(s): Lisa Henderson, Scott Cairney
Title: Sleep, executive control and mental health
Abstract: Suboptimal sleep is bidirectionally associated with mental health difficulties, including anxiety and depression. However, the neurocognitive mechanisms underpinning this relationship are poorly understood. Extant theoretical frameworks propose sleep deprivation impairs top-down executive processes that govern the suppression of intrusive thoughts, giving rise to disordered mood (Harrington & Cairney, 2021). This study will test this hypothesis - that mental health difficulties arising from disturbed sleep are mediated by executive control - in both young adults and adolescents. This cross-sectional approach brings theoretical value as adolescents experience drastic shifts in sleep architecture, vulnerability to the onset of mental health difficulties, and a critical period of executive function development. Thus, it is possible that the mediatory role of executive control is pertinent at this developmental stage. This study uses self-report measures to measure sleep (PSQI), mental health (HADS), and executive control (BRIEF-2). We hypothesise that: (i) sleep difficulties will predict negative mood, (ii) sleep difficulties will be negatively associated with cognitive control, (iii) subjective measures of sleep quality will be positively associated with cognitive control, and better cognitive control will be associated with better mood, (iv) executive control will mediate the relationship between sleep difficulties and mood symptoms. Analyses will utilise multiple correlation, hierarchical regression, and mediation analysis, as well as cross-sectional age-group comparisons. These findings may shed light on the mechanisms underpinning the relationship between sleep and mental ill health and inform the design of interventions which may have the potential to reduce the risk of mental ill-health through manipulating sleep and/or executive control.
Keywords: sleep, executive control, mental health

Presenter: Aaron Laycock
Affiliation: University of York
Supervisor(s): Cade McCall, Harriet Over
Title: Complex decision-making in threatening environments
Abstract: Individuals living and working in hazardous settings (e.g., first responders, military personnel, etc.) must make complex decisions in the midst of threats. However, studying complex decision-making within threatening environments is a considerable challenge given the obvious safety and ethical concerns.

Here we present a complex decision-making task embedded within a virtual world to allow for the direct manipulation of environmental threat. This task was developed around the functional elements of the Iowa Gambling Task (IGT), a behavioural paradigm that has been widely used to study complex decision-making. Data gathered with our new task show comparable patterns to the IGT. Participants demonstrated the ability to discriminate between advantageous and disadvantageous choices, and this ability improved as trials progressed. As with the traditional IGT, computational modelling with the Outcome-Representation Learning Model provided an accurate means of modelling the behavioural data. These findings provide the foundation for future applications of this paradigm to examine the effects of threatening environments on processes that underlie complex decision-making including learning from feedback, balancing short-term with long-term rewards, and optimising the balance between the exploration and exploitation of multiple options.

Keywords: complexity, threat, virtual-realty

Presenter: Ewan Murray
Affiliation: University of York
Supervisor(s): Silke M. Göbel, Aidan Horner
Title: The relationship between procedural complexity in Mathematics and spaced retrieval practice

Abstract: Learning mathematics almost always builds on prior learning and forgetting impedes future learning. Spacing out repeated practice has been found to better improve retention than practice in a single (massed) session (Cepeda et. al., 2006, Hattie, 2008) and actively testing students increases retention more than restudying (Rowland, 2014, Adesope et. al., 2017). It has been proposed that spaced learning is less effective for more complex material (van Gog & Sweller, 2015; but see Karpicke & Aue, 2015 for a different view), however, we do not know whether the effectiveness of retrieval practice is modulated by material complexity. We will assess the effectiveness of spaced retrieval practice as a function of procedural complexity for mathematical material. We will test at least seventy undergraduate students without an A level in mathematics in a two (spaced or massed) by two (lower or higher complexity) between participants' experimental design. The dependent variable will be the retention of the mathematical material on a post-test. Procedural complexity will be operationalised by the number of steps required to perform the procedure. We predict a benefit in retention for spaced relative to massed retrieval, and critically that this spacing effect will be greater in the lower relative to higher complexity condition.

Keywords: spacing, testing, complexity

Presenter: Lisa Parfitt
Affiliation: York St John University
Supervisor(s): Nicola Cutting, Brett Heasman, Natalie Smith
Title: Innovation on the spectrum: The process and performance of tool innovation for both neurotypical and autistic children

Abstract: Tool use is an essential component of society, with children being efficient tool users from a young age. In contrast, current research suggests that innovating tools (modifying a tool to solve a novel problem) is difficult for children under eight. New research needs to explore factors that facilitate or hinder innovation and explore innovation beyond neurotypical children. It has been suggested children's difficulty with innovation could be due to the 'ill structured' nature of tasks. Ill-structured tasks have been shown to be particularly difficult for autistic children, suggesting they may display lower levels of innovation. Alternatively autistic children may be more successful innovators due to being less constrained by the social dynamics of the task.

This study will compare performance on innovation tasks between neurotypical and autistic children, and explore factors that facilitate successful innovation, with a particular focus on how language may play a role. This study will recruit 80 children (40 neurotypical and 40 autistic) aged 5 to 8 to complete the hooks task and the floating object task, one with private speech primed and one without priming. Expressive language, receptive language and non-verbal IQ will also be tested. These results will then be analysed using chi square tests to measure any differences between groups and conditions. Logistic regression will be conducted to explore relationships between any measures and task success. Then the private speech and non-verbal behaviours will be coded to further explore factors that may facilitate successful innovation.

Keywords: innovation, autism, private speech

Presenter: Michele Deakin
Affiliation: York St John University
Supervisor(s): Stephanie Petty, Lorna Hamilton, Brett Heasman
Title: Psychological interventions for wellbeing: a systematic review focused on adults with Autism Spectrum Disorder (without intellectual impairment)
Abstract: There are high levels of co-occurring mental health diagnosis for the adult autistic population, yet research into psychological interventions for improved wellbeing of autistic adults (without intellectual impairment) is only just emerging. It is unknown how interventions effectively influence wellbeing. This mixed-methods systematic review characterised: all available psychological interventions and outcome measures, the extent of their design for autistic clients, and the elements theorised to contribute to wellbeing. An Expert-by-Experience Panel of autistic counsellors who work with autistic clients informed the review. PRISMA guidelines and PROSPERO registration improved the transparency and quality. 69 studies were included. Established tools were used to assess risks of bias in autism research specifically. Results showed there are few empirical studies of psychological interventions for improved wellbeing with autistic adults. Few studies identified whether the adaptations, specific designs or mechanisms within psychological interventions for autistic clients were thought to affect wellbeing outcomes. A minority of studies (n=22) used outcome measures designed for, or standardised with, the autistic population. The best-represented therapeutic interventions were based on mindfulness or cognitive behavioural therapy. Definitions of wellbeing were diverse, for example, from reducing anxious thoughts to supporting exploration of gender-diversity. This review provides strong evidence for the need to undertake methodologically rigorous wellbeing intervention studies with autistic adults, featuring meaningful design and participation, underpinned by the latest imperatives for using appropriate tools of outcome measurement and the latest theories of what autistic wellbeing is. This review contributes to the growing literature advocating for neurodiversity-affirmative clinical and research practices.
Keywords: autism, wellbeing, systematic review

Presenter: Shauna Lambarth
Affiliation: York St John University
Supervisor(s): Stephanie Petty, Lorna Hamilton
Title: Emotional distress described personally by autistic adults: mixed-method analysis of blog data
Abstract: Higher prevalence rates of anxiety and depression have been found amongst autistic adults compared to neurotypical individuals. Currently, neurotypical definitions and assessment measures that have been shown to be unsuitable for autistic adults are utilised within clinical practice. This means that clinicians need improved understanding of emotions as experienced personally by autistic adults to inform diagnostic decision making and therapeutic interventions.

This study was designed with consultation from autistic adults and formed part of a larger doctoral thesis. 26 blogs authored by autistic adults were identified using systematic search methods. Descriptions of emotions, including felt experience, the context of emotions, contributing factors and personal coping, were retrieved and analysed using corpus-based and thematic analyses. These autistic authors said that their emotions were unexpected and intense. Neurotypical emotion words, such as single labels, were not accurate representations. Negative emotions were caused by sensory overwhelm, social demands, disruption to routine, and disabling environments. Individuals developed a repertoire of strategies to achieve emotional regulation, including sensory stimulation, investing in immersive activities, regulation through movement, implementing routines, and developing self-understanding. These findings suggest the unsuitability of existing mainstream assessment measures of anxiety and depression for use with autistic clients. New definitions reflecting autistic individuals' experiences are required to inform formulation of difference rather than deficit. Further research within this thesis is being conducted to explore positive wellbeing and maintenance strategies through interviews with autistic adults, to contribute towards the overarching aim of this thesis to understand autistic individuals experiences of mental health.

Keywords: autism, mental health, blogs

Presenter: Luciana White
Affiliation: York St John University
Supervisor(s): Paige Davis, Stephanie Petty
Title: Conceptualising loneliness and connection in adolescence from an autistic point of view: a systematic review

Abstract: Loneliness is defined as a negative feeling characterised by the absence of quality and meaningful social relationships. For autistic adolescents, loneliness has been reported to be higher when compared to clinical (people with ADHD) and non-clinical controls. Although research offers a wealth of interventions that support social skills development in autistic people, some findings suggest that trying to conform to neurotypical social demands can lead to increased loneliness for this population. In addition, loneliness and friendship have been found to be understood and experienced differently for autistic individuals. Therefore, the main aim of this systematic review is to search for autistic understandings of loneliness, through qualitative perspectives, and to produce a valid conceptualisation of loneliness from an autistic point of view. This will contribute personal voice to literature describing mental ill health for autistic people in line with the neurodiversity paradigm. In addition, the review also addresses how 'not being lonely' feels, by exploring autistic-led strategies that promote feelings of connection and well-being. Finally, this review summarises available assessment tools of loneliness and belonging, with critique of their design and suitability for autistic clients. A comprehensive search was conducted. 58 titles met the inclusion criteria and were subjected to quality appraisal. A final synthesis will be elaborated from these titles addressing the research questions.
Keywords: autistic loneliness, autistic point of view, autistic voice

Presenter: Kathryn Lewis
Affiliation: York St John University
Supervisor(s): Lorna Hamilton, Jonathan Vincent
Title: Using creative research methods to engage neurodivergent children and young people in research

Abstract: Use of creative and arts-based qualitative research methods has increased over the past few decades to address power imbalances between the researcher and participants, and to centre the voices of participants within research. This is particularly salient when conducting research with historically marginalised groups, including neurodivergent individuals.

However, research foregrounding the first-person perspectives of neurodivergent children and young people is still limited. This poster illustrates the use of creative qualitative research methods when conducting research with neurodivergent children with a range of communication and skill profiles. The benefits and challenges of creative research methods including drawing, card sorts, walking interviews and photo-voice, are discussed. Additional considerations for adapting research approaches when working with neurodivergent children are also discussed, with the goal of minimising research hierarchies, building positive and sustainable research relationships, and producing rich and meaningful data.

Keywords: autism, children, creative research methods

Presenter: Rebecca Robinson
Affiliation: York St John University
Supervisor(s): Divine Charura, Brett Heasman
Title: A thematic analysis of clients understanding and experiences of flow within the therapeutic relationship for psychological trauma
Abstract: Objectives: This study explores clients understanding and experiences of flow, a subjective state associated with wellbeing, where one becomes fully immersed in an activity in the present moment. This could be an important process underscoring the development of successful therapeutic relationships for psychological trauma. Design: A qualitative research design allowed for a reflexive exploration of data. The constructivist ontology supported an understanding of the potential for multiple views of flow amongst participants. An interpretivist epistemology identifies that subjective knowledge can be socially constructed and lies within an individual's experience. Methods: Ten participants, recruited via purposive sampling, participated in semi-structured interviews. These encouraged reflections around experiences and understanding, of flow within the therapeutic context. The flexibility of reflexive thematic analysis allowed for the identification of commonalties and codes which were collated into themes. Results: A number of key themes were conceptualised from clients' experiences of flow within the therapeutic context. Amongst others, these included the tensions between feeling safe versus trust (which could be indicative of different orientations to flow by different parties), and tensions between differing facilitative conditions of flow within this context, compared to within other contexts. Conclusions: Flow can be experienced uniquely by clients within the therapeutic context. Therefore, flow is not a straightforward concept to understand within this specific context, especially given the tensions in approach between client and therapist as highlighted within the data. However, despite this, flow can still be achieved within the therapeutic context and can have positive benefits.

Keywords: flow, psychotherapy, therapeutic relationship

Presenter: Lauren Charters
Affiliation: University of York
Supervisor(s): Elena Geangu, Quoc Vuong
Title: The role of interoception and context in empathetic responses in naturalistic environments in infants
Abstract: Interoception, one's awareness of the physiological conditions within the body (Craig, 2002), has been investigated in terms of it's role in social cognition in adults, as well as emotion identification (Terasawa et al., 2014) and self-other distinction (Palmer & Tsakiris, 2018). However, studies investigating the role of interoception in social cognition in younger age groups (e.g., infants) is limited. Additionally, these previous studies tend to be lab-based and use photographic stimuli, and an increasing number of studies have highlighted the importance of context in understanding the emotions of others (Aviezer et al., 2017). Therefore, the current study will investigate how infants integrate contextual information with interoceptive signals when processing emotional expressions in their everyday home environment.

Caregivers of infants ranging from 6-12 months of age will receive cardiac activity monitors and head-mounted cameras, and be asked to record daily activities in the home every day for one week. Baseline EEG, self-report measures of temperament (IBQ) and physiological responses to an empathy task will also be measured for each infant. We hypothesise that 1) interoception as measured by the Perceptual Sensitivity subscale of the IBQ and heart-evoked potential (HEP) during the empathy task, will be positively correlated with increased physiological arousal during the empathy task and in response to caregiver's arousal in the home environment (affect sharing); 2) affect sharing will be mediated by the relationship between expressions and the context in which they appear.

Keywords: interoception, empathy, infants