

The Future of Social Cognition

14th & 15th June | University of East Anglia

Join us as we discuss the latest theoretical and methodological innovations at the cutting edge of social cognition research

Organisers

Dr. Andrew P. Bayliss

Dr. Natalie Wyer

Dr. S. Gareth Edwards

Sponsors

EPS

School of Psychology, University of East Anglia



Information

Location and rooms

The Future of Social Cognition workshop will be held at:
Julian Study Centre
University of East Anglia
Norwich Research Park
Norwich
NR4 7TJ

Talks will be held in *Lecture Theatre 1*, with refreshments and poster sessions in the *Foyer*.

Toilets are through double doors to your right immediately on entering the building.

Refreshments

Refreshments during breaks will be provided, as will lunch on Friday. The campus has several café's, two pubs, and a number of food outlets. For the discerning coffee drinker and art lover, we particularly recommend taking a short walk to the Sainsbury Centre for Visual Arts where you will find the café 'Kofra' behind the main desk.

Posters

Please put up your posters ahead of your session (i.e. during registration on Thursday, or before the first talk on Friday morning). There will be assistance available during these times.

Wifi

Eduroam is available, accessible via your home institutional credentials.

"*TheCloud*" is an option for those without *Eduroam* access – an account can be created on requesting access to log on.

Contact

Please approach one of the organisers, or email

TheFutureOfSocialCognition@gmail.com if we can help with anything during the workshop.

Program overview

Thursday 15 th June	
12.00-13.15	Registration open
13.15-13.30	Opening remarks
Session I – Chair: Dr Natalie Wyer	
13.30-14.30	Dr Antonia Hamilton <i>Interactive brains: neural and cognitive mechanisms of two-person social interaction</i>
14.30-15.00	Dr Patric Bach <i>One step ahead: towards a predictive processing view of social perception</i>
15.00-15.30	Dr Lynden Miles <i>Is it time to get out of the head? Self-organization and the future of social cognition</i>
15.30-16.00	Refreshments
16.00-17.00	Dr Simone Schnall <i>Embodied Morality: Current Knowledge and Future Directions</i>
17.00-18.00	Drinks reception and Poster session I

Friday 15 th June	
Session II – Chair: Dr Gareth Edwards	
9.00-9.30	Dr Eva Krumbhuber <i>Emotion Detection in 2038: Will machines outsmart humans?</i>
9.30-10.00	Dr Agnieszka Wykowska <i>Examining human social cognition with the use of humanoid robots.</i>
10.00-10.30	Dimitrios Bolis <i>Two person psychophysiology as the future of social cognition</i>
10.30-11.00	Refreshments
11.00-11.30	Dr Mario Weick <i>Methods Paving the Way into a Bright Future for Social Cognition</i>
11.30-12.00	Dr Francesca Capozzi <i>Tracking the leader: Gaze behaviour in group interactions</i>
12.00-13.30	Lunch & Poster session II
Session III – Chair: Dr Charlie Seger, UEA	
13.30-14.00	Dr Julia Vogt <i>Towards a current relevance model of motivated attention</i>
14.00-14.30	Dr Rose Meleady <i>Intergroup contact as an agent of cognitive liberalization</i>
14.30-15.00	Refreshments
15.00-16.00	Professor Neil Macrae <i>Whoever next? Stereotypes and person construal</i>
16.00-16.30	Closing remarks

Poster session I (Thursday): Titles

1. **Effects of social power on women's self-concept and self-face recognition**
2. **Object ownership, but not object touch, facilitates novel association formations**
3. **Self-development during adolescence: Is mentalising associated with self-knowledge?**
4. **Heartfelt mentalising: Interoceptive awareness predicts automatic perspective-taking**
5. **Getting to grips with action understanding: Affordance matching predictively shapes the perceptual representation of others' actions.**
6. **The Effect of Ownership Status on Obstacle Avoidance Trajectories**
7. **Barriers block the effect of joint attention on working memory: Perspective taking matters.**
8. **Task-dependent effects of reward on theory of mind**
9. **Determining the role of the Premotor Cortex in two 'Action Understanding' Processes: A Repetitive Transcranial Magnetic Stimulation Study**
10. **The personal touch – internal models of others' expected behaviour guide action observation**
11. **Examining the influence of social anxiety on interpersonal dynamics**
12. **Psychopathy, Emotion, & Social Interaction**
13. **Followers forever: moral character evaluations on social media**
14. **Overimitation and Attention: Does imitation context influence visual attention and imitation behaviour?**
15. **Empathy draws on autobiographical memories.**
16. **Can You Spot a Liar? Lie Detection and Mindreading Abilities in Adults with Autism Spectrum Disorder**
17. **Age differences in the pro-social influence effect**
18. **Social interactions and pain: Inferring causal mechanisms in an isolated social network**
19. **Childism is no child's play: Experimental and anecdotal evidence of discrimination against children**
20. **Social cognition and subjective time estimates**

- 21. Temporal organization of social vs. nonsocial information processing: An event-related potential study**
- 22. The N170 event-related potential differentiates congruent and incongruent gaze in joint attention initiation**
- 23. The Humanity Inventory: Developing and Validating an Individual Difference Measure of Dehumanization**
- 24. Characterizing the time course of face processing development**
- 25. Tracking social cognition: Social attention during group interactions predicts subsequent individual gaze following**
- 26. Role of anterior insula in social cognition**
- 27. How sensitive are we to task irrelevant 'social' cues when performing tasks in virtual space?**

Poster session II (Friday): titles

1. **Robots not avatars: studying joint attention with a humanoid robot and mobile eyetracking**
2. **Sense of agency in human-robot interaction**
3. **Facial mimicry of anger in intergroup relations**
4. **UnsocialVR: A collaborative virtual environment for comparing multimodal theories of listening behaviours**
5. **Stop Stereotyping!**
6. **Meta-cognitive influences of intergroup contact recall on attitudes and behaviours towards outgroups**
7. **Establishing how Social Identity Influences the Formation and Evolution of Cultural Stereotypes**
8. **Group cohesion as a social threat: evidence for a lowered social threat detection threshold in paranoia**
9. **The role of attentional control and cognitive emotion regulation strategies in the relationship between valuing happiness and depression**
10. **Is something better than nothing?**
11. **The relationship between metacognition and hostile attributions in ambiguous social situations**
12. **Association between social cognitive skills and cognitive biases in healthy individuals**
13. **Bad People Feel Close to Bad Outcomes: Immanent Justice Reasoning by Spatial Proximity**
14. **Co-representation interference from a partner's task: The interfering role of competition for great apes**
15. **Social outcomes and agency**
16. **Social Perception and Interaction Database (SoPID) – a novel database for studying social cognitive processes with point-light displays**
17. **Valence and Ownership: How Does Self-Relevance Influence Object Categorization?**
18. **Investigating attentional capture by a co-actor's task/control setting**
19. **Implicit interpersonal influences in visual attention: From behaviour to EEG**
20. **Gaze cues (repeatedly) fail to influence person evaluation**

- 21. Physical aggression and attentional bias to angry faces: An event related potential study**
- 22. Target and perceiver social category membership influence emotion perception.**
- 23. An eye-tracking investigation of real-time social interaction**
- 24. The supramarginal gyrus in empathy and perspective taking**
- 25. Dissociating Perceptual Biases for Self and In-group Processing**
- 26. Two-person psychophysiology to study social interaction**
- 27. Neural processes underlying reading the mind in the eyes of children – introduction to the Nencki Children Eyes Test (NCET)**
- 28. Bound Together: Social binding leads to faster processing, spatial distortion and enhanced memory of interacting partners.**

1. Effects of social power on women's self-concept and self-face recognition

Eva G. Krumhuber¹, Shira Tzur¹, Jason Drummond², Anthony Steed²

(1) Department of Experimental Psychology, University College London (2) Department of Computer Science, University College London

Social power is a ubiquitous construct affecting individuals' cognition and behaviour. While previous work on social power has relied on explicit instructions to induce feelings of power (e.g., Duguid & Goncalo, 2011; Galinsky, Gruenfeld, & Magee, 2003), this research takes a novel approach to the study of social power by using state-of-the-art techniques in immersive virtual environments. Based on work demonstrating that body ownership can shape associations with higher-level concepts of the self (Banakou, Groten, & Slater, 2013), we explored whether power experiences in VR lead to changes in self-power associations and visual self representation. To this end, 30 female participants became either a powerful (manager) or powerless (employee) figure, embodied through an avatar in an online virtual world. To create a sense of body-ownership, participants' physical head and body movements were tracked with motion capture and then mapped on the avatar in real time. Using an IAT, we measured implicit attitudes towards the self and power, before and after the virtual power experience. In line with predictions, powerful experiences led to stronger self-identification with high power, while associations between self and low power increased in the powerless condition. Interestingly, power affected self-face recognition only in the low power condition, with women selecting more submissive images of themselves after embodying a powerless figure. The present research extends previous findings regarding power and women's self-concept, and suggests that the effects of power may be subject to gender roles, leading to the activation and use of power-gender congruent face schemas.

2. Object ownership, but not object touch, facilitates novel association formations

Khadija Osman^{1}, Lee Casey^{2*}, Joe Mathewson^{2*}, Andreas Lidström², Sara Bengtsson^{2#}*

(1) Karolinska Institutet, Sweden. (2) School of Psychology, University of East Anglia, UK (*) the authors have contributed equally to the work. (#)

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Embodied cognition theories stipulate that sensorimotor processes (SM) determine cognition. Observations of gestures facilitating word learning, and touch benefiting object recall, back these theories. We interpret embodied cognition as SM being integral to the self-concept, and test the hypothesis that touching objects enhances the self-reference effect (SRE). 112 participants memorized 'abstract symbol'-'real object' combinations. Objects belonged to participant or experimenter. Half of the participants held objects during encoding. While we observed SRE; higher memory scores for own-object pairs, no Ownership*Hands interaction was found. Thus, SM did not enhance SRE which lends an integral self-concept unsupported. Notably, results also lack provision for touch benefiting association ties between objects and abstract information.

3. Self-development during adolescence: Is mentalising associated with self-knowledge?

*Scheuplein M^{*1}, Ahmed S^{*1}, Foulkes L², Griffin C¹, & Blakemore S-J¹*

(1) Institute of Cognitive Neuroscience, University College London, London, UK. (2) Department of Education, University of York, UK

Mentalising and self-referential processing are known to undergo continued development during adolescence. We investigated the effect of age on both mentalising and self-referential processing, and the relationship between the two variables. Mentalising ability was assessed using the Director task (Dumontheil, Apperly, & Blakemore, 2010). Memory performance for self-related adjectives vs. non-self-related adjectives was assessed as a measure of self-referential processing. Preliminary data from a group of adolescents aged 11-17 and adults aged 23-35 show that adults had a greater capacity for mentalising and an enhanced memory for non-self-related adjectives compared with adolescents, who showed enhanced memory for self-related adjectives.

4. Heartfelt mentalising: Interoceptive awareness predicts automatic perspective-taking

Sabira Habib & Mark Gardner

University of Westminster

Interoception may contribute to social cognition by grounding the self in the body, influencing self/other switching. While individual differences in interoceptive awareness predict body ownership illusions, similar associations are currently lacking for mentalising tasks. Here, we assessed how automatic perspective-taking (Samson avatar task) was related to interoceptive awareness (heartbeat counting, N = 40). Perspective-taking was negatively correlated with interoception; participants less sensitive to internal bodily signals showed a greater RT elevation when a task-irrelevant avatar had conflicting knowledge. We propose that interoception leads to a reduced tendency for automatic and spontaneous perspective-taking by enhancing self-focus and safeguarding against self-other blurring.

5. Getting to grips with action understanding: Affordance matching predictively shapes the perceptual representation of others' actions.

Katrina L. McDonough¹, Patric Bach¹, Marcello Costantini², Matthew Hudson¹

(1) University of Plymouth. (2) University of Essex.

Our recent research revealed that prior expectations about forthcoming actions can bias perception of these actions towards the expectation. Here we show that these predictions are made implicitly and are updated on-line. Participants observed reaches towards a small and large object forming either a power or precision grip. The hand disappeared mid-way, and participants judged the last seen position on touch screens. Judgements were consistently biased in line with grip-object-match action expectations. This replicates our findings that action understanding is predictive and these predictions are perceptual, and demonstrates, for the first time, that predictions are implicit and are updated on-line.

6. The Effect of Ownership Status on Obstacle Avoidance Trajectories

Emma Watkinson-Aspinall, Stephanie Rossit and Andrew P. Bayliss

University of East Anglia

Research indicates that ownership (mine or yours) affects object-directed action performance (e.g., Constable et al., 2011; 2014; 2016). However, we investigated whether the ownership of non-target objects (obstacles) affects movement performance, as some evidence suggests identity-related features of obstacles alters avoidance behaviour (De Haan et al., 2014). Twenty undergraduates performed reach-to-point movements in the presence of obstacles (water bottles) owned by themselves, or the experimenter. Extending the body of work about ownership's effects on visuomotor processes, we found some evidence that obstacle avoidance is influenced by ownership, with greater movement deviation away from the experimenter's bottle (vs. self-owned).

7. Barriers block the effect of joint attention on working memory: Perspective taking matters.

Samantha E A Gregory¹ & Margaret C Jackson²

(1) Aston University (2) University of Aberdeen

Previously we found that joint attention can strengthen working memory (WM) for coloured squares. Here we examined whether this is due to perspective taking. We used a barrier that either obstructed the view of the cue face (no perspective taking possible), or had a window the cue could 'see' through (perspective taking possible). Results showed that when the barrier had a window, WM was significantly impaired for invalidly versus validly cued (i.e., jointly attended) items. When the barrier had no window, validity did not influence WM. This indicates that the effect on WM relies on perspective taking.

8. Task-dependent effects of reward on theory of mind

Kristian H. Tempelmans Plat, Simon Brett & Bhismadev Chakrabarti
University of Reading

We tested the impact of reward on Theory of Mind (ToM) using an implicit (mouse-tracking task; van der Wel et al., 2014) and an explicit (Sandbox; Bernstein et al., 2011) belief tracking task. A significant effect of reward on belief tracking was noted for the explicit but not the implicit task. In the explicit belief tracking task, participants were more biased by self-belief while taking the perspective of a rewarding vs. a non-rewarding individual. The results suggest that the reward value of an individual influences the tracking of their belief only when that individual's perspective is explicitly taken into account.

9. Determining the role of the Premotor Cortex in two 'Action Understanding' Processes: A Repetitive Transcranial Magnetic Stimulation Study

Emma L Thompson¹, Geoffrey Bird², Caroline Catmur¹
(1) Kings College, London (2) University of Oxford

Premotor cortex (PMv) has been claimed to be involved in two distinct 'action understanding' processes: identifying actions (Pobric & Hamilton, 2006), and identifying intentions (Michael et al., 2014). The current study sought to resolve this dispute by investigating the timecourse of PMv involvement in these processes. Disruptive transcranial magnetic stimulation (TMS) was administered to the PMv and a control site at varying timepoints while participants identified either the actions or intentions portrayed by hand movements. A significant interaction was found between brain site, time of stimulation, and the action understanding process, with early disruption to the PMv impairing action identification.

10. The personal touch – internal models of others' expected behaviour guide action observation

Kim Schenke
University of Gloucestershire

Social interactions are full of uncertainties. One mechanism to manage this uncertainty is through predictions. Whilst research has focused on the use of available cues for informing these predictions, we recently demonstrated the use of internal person-models formed from the knowledge of how different people typically behave in different situations, and how these can shape action predictions (Joyce, Schenke, Bayliss & Bach, 2015; Schenke, Wyer & Bach, 2016; see also Bach & Schenke, 2017). My current research further explores the person-specific nature of these predictions to consider both the mechanisms behind this and what other factors might influence the use of this information during predictions.

11. Examining the influence of social anxiety on interpersonal dynamics

Miles, L.K., Marie, D., & Macpherson, M.C.
University of Aberdeen

Individuals experiencing social anxiety disorder (SAD) show deficits in the way they coordinate with others. It is unclear however, whether sub-clinical symptoms of SAD also account for variation observed within interpersonal coordination. The present work explored this question through two studies that focused on the lawful characteristics of synchronous action. Study 1 revealed an influence of SAD symptomology on interpersonal coordination in a typical student sample. Study 2 revealed that this influence may differ as a function of the level of engagement portrayed by an interaction partner. This work extends contemporary (i.e., continuum) approaches to mental health and social interaction.

12. Psychopathy, Emotion, & Social Interaction

Antonietta Chaliou; Supervisors: Dr Lynden Miles and Dr Dannette Marie
University of Aberdeen

Individuals with psychopathic traits often have atypical emotional responses. This suggests that aspects of maladaptive interpersonal behaviour associated with psychopathy may be grounded in how emotional information is engaged. This project seeks to understand how variation in psychopathic traits change real-time affective dynamics during interpersonal interaction. Initial work has focussed on developing methods to understand whether the timing of facial muscle activity (as an index of affective processing) impacts relationship quality during dyadic interaction. Results indicate that by measuring transactional emotional processes during actual social interaction, insight into the complex relationships between affect, psychopathy and social exchange can be gained.

13. Followers forever: moral character evaluations on social media

Simon Tobias Karg, Michelle Lim and Simone Schnall
University of Cambridge

When learning about moral wrongdoings, we are more likely to forgive close others. But does this also apply to public role models whom we do not know? Using a new machine learning approach on a large dataset of YouTube comments ($n = 850000$) before and after a highly publicized scandal, we find that the more often a person had publicly expressed their approval of the protagonist before the scandal, the stronger was their post-scandal support, including more positive and fewer negative emotions. Thus, highly committed fans fail to update existing moral character evaluations even in light of an extreme transgression.

14. Overimitation and Attention: Does imitation context influence visual attention and imitation behaviour?

Lauren E. Marsh and Katherine Cropper
University of Nottingham

Through observation of others actions, we can learn about the function of novel objects, we can learn about an individual's preferences and we can also learn about their cultural tendencies. Social learning can take any of these forms but a key question which remains unanswered is which of these take precedence in a novel situation? In this study we assess overimitation in familiar and novel contexts whilst measuring participants' eye movements. We assess the extent to which visual attention to different aspects of a demonstration can predict imitation behaviour.

15. Empathy draws on autobiographical memories.

Federica Meconi, Ian Apperly & Simon Hanslmayr
University of Birmingham

Accumulating evidence supports the idea that our memories interact with empathy when building a representation of others' inner states. However, direct evidence of a reactivation of autobiographical memories when it comes to empathizing with others' inner states is yet to be shown. We collected electroencephalographic activity from 28 participants while performing an empathy and a retrieval task. The results of the pattern classifier we used showed evidence for the reactivation of autobiographical memories in preparation for the empathy judgement. These findings demonstrate that autobiographical memories are involved in drawing our empathy.

16. Can You Spot a Liar? Lie Detection and Mindreading Abilities in Adults with Autism Spectrum Disorder

Nicholson, T¹, Grainger, C², Lind, S³, Carruthers, P⁴, and Williams, D¹

(1) University of Kent. (2) University of Stirling. (3) City University, London. (4) University of Maryland.

Deception detection is of fundamental importance for everyday social life and might require “mindreading”. People with diminished mindreading, such as those with autism spectrum disorder (ASD), might be at risk of manipulation because of lie detection difficulties. Across two experiments using a realistic lie detection paradigm, we found that a) lie detection performance was significantly negatively associated with number of ASD traits, but not with mindreading ability, and b) lie detection was significantly impaired in 27 adults with a diagnosis of ASD relative to 27 matched comparison participants. Results suggest that people with ASD (or ASD traits) may be particularly vulnerable to manipulation and may benefit from lie detection training.

17. Age differences in the pro-social influence effect

Foulkes, L¹, Leung, J¹, Fuhrmann, D², Knoll, L¹, & Blakemore, S-J¹

(1) University College London. (2) University of Cambridge.

Social influence occurs when an individual’s thoughts or behaviours are affected by other people. There are significant age effects on susceptibility to social influence, typically a decline from childhood to adulthood. Most research has focused on negative aspects of social influence, such as peer influence on risky behaviour, particularly in adolescence. The current study investigated the impact of social influence on the reporting of prosocial behaviour (any act intended to help another person). In this study, 755 participants aged 8-59 completed a computerised task in which they rated how likely they would be to engage in a prosocial behaviour. Afterwards, they were told the average rating (in fact fictitious) that other participants had given to the same question, and then were asked to rate the same behaviour again. We found that participants’ age affected the extent to which they were influenced by other people: children (8-11 years), young adolescents (12-14 years) and midadolescents (15-18 years) all significantly changed their ratings, while young adults (19-25 years) and adults (26-59 years) did not. Across the three youngest age groups, children showed the most susceptibility to prosocial influence, changing their reporting of prosocial behaviour the most. The study provides evidence that younger people’s increased susceptibility to social influence can have positive outcomes.

18. Social interactions and pain: Inferring causal mechanisms in an isolated social network

Stephanie Burnett Heyes^{1}, Per Block^{2*}, Lauren C Heathcote^{3*}*

(1) University of Birmingham. (2) ETH Zürich. (3) Stanford University. *equal contribution. s.burnettheyes@bham.ac.uk

Does pain affect social interactions? Do social interactions influence pain? Designing research to disentangle the potentially bidirectional, causal, associations between social and personal phenomena is challenging. The current study addressed these challenges using a tightly-controlled, longitudinal, social network design. Participants gave daily pain and social interaction data during a 3-week hike in Greenland. Stochastic actor-oriented modelling revealed pain-related popularity ([de-]selection of interaction partners based on their levels of pain), but no pain homophily or contagion. Specifically, males in pain withdrew from social contact. Results showcase interdisciplinary methods combining social network and psychological approaches, and identify follow-up psychological hypotheses to test.

19. Childism is no child's play: Experimental and anecdotal evidence of discrimination against children

Santos, J. O., Hagá, S., & Garcia-Marques, L.

Universidade de Lisboa

Throughout history we've come to recognize and fight against discriminatory practices once deemed acceptable. However, we seem to have overlooked a whole social category, whose characteristics (e.g., dependence, low power) and socio-historical background make them particularly vulnerable to discrimination—children. In an experimental study, participants perceived discriminatory statements targeting children or pets as more acceptable than those targeting other minorities. In a qualitative study, participants' recollections of episodes when they felt discriminated against for being children shine light on this phenomenon. I'll argue a social cognitive study of childism would benefit from and further the literature on discrimination and prejudice.

20. Social cognition and subjective time estimates

Norman, E., Dybdahl, S. J., Engelschiøn, H., Faulkald, T. F., Fondevik, J. S., Kransberg, J., Olsnes, J., Ordemann, S., Ottersen, I., and Wold, M.

University of Bergen

Three experiments explored whether and how time perception (time passage and time duration) is influenced by variables relevant to social cognition. Experiment 1 explored the influence of social acknowledgement (cf. Maister, 1985) on time perception in a waiting situation. Experiment 2 addressed time perception in media multitasking, applying a design that avoided some of the limitations of Xu (2018). Experiment 3 compared the influence of construal level on time judgements for a film clip that was either likely (Heider & Simmel, 1944) or unlikely to be interpreted as a social plot. Results will be presented and discussed at the conference.

21. Temporal organization of social vs. nonsocial information processing: An event-related potential study

Jarosław Biedrzycki¹ and Łukasz Okruszek²

(1) Faculty of Psychology, University of Warsaw. (2) Institute of Psychology, Polish Academy of Sciences.

The neural correlates of social information processing are the focus of widespread research interest. While the spatial organization of social brain networks has been extensively studied, little is known about the temporal organization of social cognitive processes. Here, we investigated event-related potentials (ERPs) during the task, which tapped into various nonsocial and social cognitive processes (social perception, emotion recognition, theory of mind) in 14 healthy individuals. Numerous differences were found both in the early and late stages of social vs. nonsocial stimuli processing. However, no such discrepancies were observed between specific social cognitive conditions.

22. The N170 event-related potential differentiates congruent and incongruent gaze in joint attention initiation

Lisa J. Stephenson, S. Gareth Edwards, Louis Renoult and Andrew P. Bayliss

University of East Anglia

When initiating joint attention, the gaze responses we elicit from social partners must be processed rapidly to facilitate on-going social interaction. Electroencephalography (EEG) is an ideal tool to help elucidate the neuro-cognitive processes at work, given the high temporal resolution EEG affords. Participants looked from a face to an object, and the face's eyes either followed or looked elsewhere. A negative potential resembling an N170 was elicited by this observed gaze shift. This was greater for congruent than incongruent gaze shifts elicited in response to joint attention initiation. We conclude that this reflects the detection of successful joint attention initiation.

23. The Humanity Inventory: Developing and Validating an Individual Difference Measure of Dehumanization

Dorottya Lantos¹ & Lasana T. Harris²

(1) Goldsmiths University, London. (2) University College London.

Social cognition can be flexibly engaged, evidenced by dehumanization: a failure to engage in spontaneous social cognition (Harris, 2017). Psychological (Haslam & Loughnan, 2014) and neuroscientific research (Harris & Fiske, 2006) suggest that we all engage in dehumanization, at least occasionally. Existing measurements fail to capture individual differences in the propensity to dehumanize across targets and social contexts. The present studies aimed to create an individual difference measure of dehumanization. Across five studies, we developed and validated the Humanity Inventory. These studies further suggest that dehumanization propensity is in fact an individual difference variable.

24. Characterizing the time course of face processing development

Ines Mares¹, Louise Ewing², Emily K. Farran³, Michael Pappasava¹, Fraser W. Smith², Marie L. Smith¹

(1) Department of Psychological Sciences, Birkbeck College, London, UK. (2) Department of Psychology, University of East Anglia, Norwich, UK. (3) Department of Psychology and Human Development, UCL Institute of Education, University College London, UK.

Performance on lab-based face processing tests improves across childhood, but the mechanisms of change remain unclear. We apply multivariate pattern analysis to characterise the neural underpinnings of this developmental process, via EEG. We observed early classification of faces vs. houses and of upright vs. inverted faces (indices of specialised face processing) in even the youngest children, along with clear shifts in the timecourse of these processes. These results constitute new developmental evidence of a key marker of face processing, and highlight the value of considering the overall neural response.

25. Tracking social cognition: Social attention during group interactions predicts subsequent individual gaze following

Francesca Capozzi and Jelena Ristic

Department of Psychology, McGill University, Montreal, QC, Canada

We show that social attention is a key mechanism by which group dynamics influence individual members. Participants interacted in three-person groups, while their looking behavior was recorded, and then completed a gaze-cuing procedure assessing individual gaze following responses to gaze displayed by fellow group members. We found that the more a group member was perceived as contributing to the group activity, the more they were looked at by their fellow group members. This looking behavior then positively predicted the magnitude of gaze following elicited later. Thus, we provide one of the first examinations of how group dynamics affect individual function.

26. Role of anterior insula in social cognition

Zahra Moradi

University of Oxford

Previous studies have highlighted the important role of the frontal lobe structures in social cognition. However, there is growing evidence for the role of anterior insula in social cognition. Meta-analyses of neuroimaging studies revealed activation of anterior insula in tasks related to social/emotional processing. More importantly, damage to the anterior insula has been shown to result in disorders of social cognition observed in various neurological conditions. I will argue that to better understand the role of anterior insula in social cognition it is important to bridge between clinical and social neuroscience approaches. Using tasks that captures the deficits in social cognition in neurological cases can potentially shed some lights on the role of different parts of the brain in social cognition.

27. How sensitive are we to task irrelevant 'social' cues when performing tasks in virtual space?

Hailey Underwood, Louise Ewing, Andre Bester and Andrew P. Bayliss

University of East Anglia

Social anxiety (SA) has been linked with an attentional bias towards social-signals -particularly those perceived to be negative, which may constrain the availability of broader cognitive resources. Here, we explored how even simply sharing a virtual environment with a human-like avatar influences memory and behaviour (measured via motion tracking) in participants with different SA levels. Results support sensitivity to the presence and emotional character of these avatars in all participants, with the strongest avoidance behaviour and performance costs observed in high SA.

Poster session II (Friday): Abstracts

1. **Robots not avatars: studying joint attention with a humanoid robot and mobile eyetracking**

Cesco Willemse and Agnieszka Wykowska

Social Cognition in Human-Robot Interaction, Istituto Italiano da Tecnologia, Genoa, Italy

To examine the rewarding effect of successful initiation of joint attention, we designed a study which involved a social interaction with the iCub robot. During the interaction, we recorded eye-movements with a mobile eye tracker and we made the robot's behaviour gaze-contingent. Participants interacted with two robot 'identities' who differed in how they responded to the participant's gaze. We report the effect of this behavioural contingency on facilitated attention toward the agent and how it impacted attributions of mental states and preference. Moreover, we demonstrate how using humanoid robots in naturalistic settings allows for ecological validity whilst maintaining experimental control.

2. **Sense of agency in human-robot interaction**

Francesca Ciardo¹, Frederike Beyer², Davide De Tommaso¹ and Agnieszka Wykowska¹

(1) Social Cognition in Human-Robot Interaction, Istituto Italiano da Tecnologia, Genoa, Italy. (2) Institute of Cognitive Neuroscience, University College London, London, UK.

The present study examined Sense of Agency (SoA) in interaction with the Cozmo robot (AnkiTM). Participants were asked to perform costly actions (losing various amounts of points) to stop an inflating balloon from exploding. In 50% of trials, only the participant could stop the balloon from inflating ("individual condition"). In the remaining trials, both Cozmo and the participant were in charge of preventing the balloon from exploding ("joint condition"). SoA ratings were lower in the joint than in the individual condition. This reveals that interacting with robots reduces SoA, suggesting diffusion of responsibility in the presence of non-human agents.

3. **Facial mimicry of anger in intergroup relations**

Carla Murteira¹, Agnieszka Golec de Zavalá^{1,2} and Sven Waldzus¹

(1) Centro de Investigação e Intervenção Social, ISCTE-IUL. (2) Goldsmiths, University of London.

Facial mimicry is the automatic and the unconscious mirroring of other people's emotional expressions. Individuals show higher mimicry of anger towards ingroup than outgroup members. In a set of studies, it is proposed that ostracism feelings seem to be related to larger mimicry of anger towards ingroup than outgroup members. The process and functions of mimicry of anger are discussed in relation to social identity theory and ostracism theory.

4. **UnsocialVR: A collaborative virtual environment for comparing multimodal theories of listening behaviours**

Tom Gurion, Patrick Healey, Julian Hough
Queen Mary University of London

We present a collaborative virtual environment for comparing models of listening behaviours in conversation. Users can fake attention by pressing a button. While faking, automatic algorithms take control over their avatar to continuously produce socially appropriate responses. A scoring mechanism encourages both faking attention and trying to detect when other users do so. With this Turing test for algorithmic listening behaviours, theories can be modelled, implemented, and compared directly. Perceived plausibility, as collected in real-time by the gamified environment, can then provide an alternative to less reliable self-reported measures that are commonly used in today's social cognition research.

5. Stop Stereotyping!

Johanna K. Falben and C. Neil Macrae

University of Aberdeen

Previous research has demonstrated that contextual factors influence stereotype activation. Here we considered the associated, yet unexplored issue, of how successfully this process can be inhibited. In a person-categorisation task, participants responded whether an occupational scene followed by either a male or female face matched or mismatched prevailing societal stereotypes about the sexes. Importantly, on 25% of trials, an auditory signal informed participants to withhold their response. Supporting the predictive-coding framework, the results revealed that stereotypic responses were generated and inhibited faster than counter-stereotypic responses. These findings enhance understanding of social stereotyping and how response inhibition impacts person construal.

6. Meta-cognitive influences of intergroup contact recall on attitudes and behaviours towards outgroups

Marieke Vermue, Charles R. Seger & Rose Meleady

University of East Anglia

This project proposes a novel methodology aiming to change people's attitudes towards outgroups, by targeting perceptions of previous contact instead of increasing direct contact with the group. Based on the ease-of-retrieval and availability heuristic, participants recalled either one or five different previous positive interactions with the outgroup. Participants who recalled one interaction with the outgroup and experienced ease in this process, indicated higher future contact intentions and more positive outgroup attitudes than participants who recalled five different interactions and experienced difficulty. This effect of number of contact recalls on outgroup attitudes and behaviour was mediated by self-perceptions of contact.

7. Establishing how Social Identity Influences the Formation and Evolution of Cultural Stereotypes

Carolyn Dallimore¹, Jacqui Hutchison¹, Sheila Cunningham², Kenny Smith³, and Douglas Martin¹

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Previous research suggests novel stereotypes can form as social information is repeatedly passed from person to person. We examined whether stereotype formation is influenced by intergroup bias. Participants were asked to remember personality attributes associated with novel social targets, some of whom shared a minimal group with the participant. The target-attribute associations recalled by participants at test were used as learning materials for the next participant in the chain. As information passed down the chains, it became increasingly simplified, structured, and learnable. We also found in-group favouritism in predicted attributes for previously unseen targets, but not memory for learned targets.

8. Group cohesion as a social threat: evidence for a lowered social threat detection threshold in paranoia

Anna Greenburgh, Vaughan Bell and Nichola Raihani

University College London

Humans have evolved mechanisms for detecting and responding to social threat. These mechanisms are thought to be sensitive in paranoia. We explore whether social cohesion of an opposing group acts as an input to these mechanisms. Participants from a large-N sample (n=1165) played a Trust Game in one of two conditions: interacting against a cohesive or non-cohesive opponent group. Attributions of malevolent intent were higher for cohesive opponents; and increased independently with pre-existing paranoia. This suggests that group cohesion is tracked by social threat detection mechanisms, and that paranoia is associated with a lowered threshold for social threat detection, rather than increased reactivity to it.

9. The role of attentional control and cognitive emotion regulation strategies in the relationship between valuing happiness and depression

Bahram Mahmoodi Kahriz, Joanne L. Bower, Francesca M. G. Q. Glover & Julia Vogt

University of Reading

Our studies aimed to investigate the role of impaired attentional control and cognitive emotion regulation strategies in the ironic link between valuing happiness and negative psychological outcomes in two British samples (N = 450). We found that having difficulties in cognitive emotion regulation strategies such as cognitive reappraisal and savouring beliefs (e.g. knowing how to make the most of a good time) mediate the paradox link between valuing happiness and depression. Additionally, our findings indicated that low levels of attention control especially in emotional situations and also high levels of intrusion and suppression impact this relationship.

Keywords: valuing happiness, cognitive reappraisal, savoring beliefs, emotion attention control, depression

10. Is something better than nothing?

Kant, L. E. J., and Norman, E.

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In a situation that requires action, it often feels better to do something than nothing, even if «something» is an irrelevant action. We explored this assertion in a series of experiments comparing people's attributional judgements for descriptions of people engaging in either passivity, irrelevant action, or relevant action. Experiment 1 showed that people prefer irrelevant action over passivity. In Experiment 2a and 2b, where we controlled for need-fulfilment of irrelevant actions, this was not replicated. However, findings showed that people attribute activity versus passivity differently in leaders and subordinates, and that passivity is more often attributed to stable traits.

11. The relationship between metacognition and hostile attributions in ambiguous social situations

Anna Schudy¹, Marta Chrustowicza², Łukasz Okruszek¹

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Deficits in social cognition and cognitive biases such as hostile attributions are among the main factors which contribute to reduced social functioning in psychiatric populations. Here we assessed the association between metacognition and hostile attributions in general population. One-hundred two healthy individuals completed the Ambiguous Intention Hostility Questionnaire and the Metacognitions Questionnaire-30. Significant positive relationship between a wide range of maladaptive metacognitions and tendency to attribute blame to others in ambiguous situations but not in intentional or accidental situations was observed. This result suggests that reaction to ambiguous social situations may be linked to metacognitive style.

12. Association between social cognitive skills and cognitive biases in healthy individuals

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Numerous cognitive biases have been documented, both in clinical populations and in healthy individuals. Reduced social cognition may be among the factors associated with cognitive biases in a general population. Here, we assessed the relationship between two types of cognitive biases measured by The Cognitive Biases Questionnaire for Psychosis and performance in a battery of social cognitive tasks in a sample (n=102) of healthy individuals. Cognitive biases related to “Anomalous Perception” but not “Threatening Events” themes were found to be negatively associated with social cognitive abilities in participants. Thus, only certain cognitive biases may be linked to reduced socioemotional stimuli processing.

13. Bad People Feel Close to Bad Outcomes: Immanent Justice Reasoning by Spatial Proximity

Joshua Moreton¹, Mitchell Callan² & Gethin Hughes¹

(1) University of Essex. (2) University of Bath.

Across 3 experiments, we tested the idea that lapses in causal reasoning also influence spatial proximity. Participants positioned people's negative life events significantly closer to their previous immoral behaviours, compared to positive life events. This was the case both when participants ordered the sentences in a list (Experiment 1), and when they were free to move the outcome anywhere on the screen (Experiment 2). In Experiment 3, the positive or negative outcome was being "chased" across the screen by a bad person. Participants acted to keep good outcomes and bad people apart, as compared to bad outcomes and bad people.

14. Co-representation interference from a partner's task: The interfering role of competition for great apes

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Human adults and 4-year-olds automatically co-represent a co-actor's task when acting jointly (Milward et al., 2014; Sebanz et al., 2003). This mechanism is argued to have evolved to aid prediction of a partner, but also interferes with one's own performance. We designed a novel object selection task to measure this with great apes. We found no evidence for human-like task co-representation, but we did see decreased accuracy when apes had to reach towards the same side of the apparatus. This suggests that apes may represent another's actions to some extent, but that this is a competitive rather than collaborative mechanism.

15. Social outcomes and agency

Jack D Moore and James W Moore

Goldsmiths, University of London

In recent years there has been increased interest in how one's social environment affects the amount of ownership and responsibility one takes over actions. Nonetheless, little research has assessed how variation in the social implications (in terms of number of people) of an action affects the amount of agency an individual takes over the event. The presented research uses a joint gambling design whilst measuring changes in temporal perception between an action and outcome (a reliable measure of the amount of ownership taken over an event) in order to assess how changes in the social impact of an action affects the amount of ownership that one takes over both their own, and others, actions. Findings indicate that we feel more ownership over actions, which have a wider as opposed to smaller social impact, irrespective of whether actively involved in the event.

16. Social Perception and Interaction Database (SoPID) – a novel database for studying social cognitive processes with point-light displays

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Numerous studies have shown that, despite limited availability of visual information, healthy individuals are able to infer various types of social signals from point-light displays (PLDs). Here, we present a novel dataset which allows one to use PLDs for studying multiple social cognitive processes and encompasses a range of communicative, affective and individual actions of single/dyadic PLDs. Results of the pilot study revealed that healthy individuals are able to easily differentiate communicative from individual actions and correctly recognize PLDs affective state. Follow-up neuroimaging study has also shown differential activations across mentalizing and mirroring networks for certain types SoPID actions.

17. Valence and Ownership: How Does Self-Relevance Influence Object Categorization?

Marius Golubickis and C. Neil Macrae

University of Aberdeen

Previous research has revealed that ownership exerts a potent influence on perceptual decision-making. Here we investigated the speed with which participants categorized objects (i.e., desirable or undesirable posters) that belonged either to self or a best friend. Data were interrogated using a hierarchical drift diffusion model (HDDM) approach. The results revealed a self-ownership effect, such that responses were faster to self-owned than friend-owned items. This effect was underpinned by a combination of pre-decisional (i.e., prior) (i.e., evidence sampling requirements) and dynamic (i.e., processing efficiency) biases. These findings advance theoretical understanding of how valence influences the self-ownership effect.

18. Investigating attentional capture by a co-actor's task/control setting

Juan Camilo Avendaño Diaz, Xun He

Bournemouth University

Using a spatial cuing paradigm, Folk, Remington and Johnston (1992) found that involuntary attentional shifts are contingent on the relationship between the cue and target-relevant properties. Here we examined whether one's involuntary attention allocation is contingent not only on one's own task property, but also on a co-actor's task properties. We modified the paradigm, so it could be performed by a single participant or by two participants, with the co-actor focusing on the cue properties. Preliminary results replicated the contingent capture effect for one's own task set, but showed no significant capture by the co-actor's task-relevant property.

19. Implicit interpersonal influences in visual attention: From behaviour to EEG

Xun He, Juan Camilo Avendaño Diaz

Bournemouth University

To date, little is known about interpersonal influences on cognition in the absence of explicit intention to interact. We adapted Posner's sustained attention paradigm to make it suitable to be performed independently by two people either sharing or not sharing their locus of attention. A reduction in attention effect was observed behaviourally when the dyad shared attention locus, but only at a late stage in the EEG data, which showed the opposite pattern for sensory processing. We propose implicit social influences as a basis of cognitive functioning, and that studying them constitutes a promising future direction in the field.

20. Gaze cues (repeatedly) fail to influence person evaluation

Margaret C Jackson¹, Samantha E A Gregory², Benjamin W Tatler¹, & C Neil Macrae¹

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Objects are liked more when a cue face is observed to look towards vs. away from them. However, one published study failed to replicate this effect of gaze on person evaluation. Across four experiments, we also found no effect of gaze on liking and trust ratings of faces, regardless of whether: the cue face was neutral or expressive; eyes moved or head turned; cue and target faces appeared simultaneously vs. offset; target face looked towards the cue face or not. Thus, observing inclusionary/exclusionary gaze signals does not modify the 'social value' of humans, at least when explicit evaluations are measured.

21. Physical aggression and attentional bias to angry faces: An event related potential study

Rebecca V. Crago¹, Louis Renoult¹, Laura Biggart¹, Gavin Nobes¹, Tamara Satmaraan² and Jennifer O. Bowler¹

(1) University of East Anglia. (2) University of Sheffield.

The study investigated the aetiology of physical aggression by identifying the neural correlates of aggression-related attentional selectivity to angry faces. Visual attentional bias was assessed using a dot-probe task during which angry and neutral faces were presented simultaneously, and electroencephalogram (EEG) was recorded. Behavioural results indicated that higher levels of physical aggression were associated with faster attentional orienting to angry faces. Event-related potential (ERP) results revealed an interaction where individuals with higher physical aggression had undifferentiated P300 amplitudes to angry and neutral trials, whereas low physical aggression participants exhibited greater P300 amplitude to angry than to neutral trials.

22. Target and perceiver social category membership influence emotion perception.

Hutchison, J, Slessor, G., Swainson, R., and Martin, D.

Aberdeen University

Previous research has found people are better at recognising happy faces when they are female or white and angry faces when they are male or black; however, most participants in such research have been white females. We asked equal numbers of female and male participants to categorise the emotions of happy and angry target faces that contextually differed in both race and sex. We found that women were better at recognising happy female/White faces and angry male/Black faces, whereas men showed an overall advantage for recognising happy faces. Crucially, these emotion recognition biases were influenced by social category context.

23. An eye-tracking investigation of real-time social interaction

M. De Lillo, V. Brunson, E. Bradford, and H. Ferguson

University of Kent

Social interactions characterize a large part of our lives. Previous research has typically used static pictures or computerized lab tasks to analyse these social components. Here we explore social interactions using more ecologically valid methods. Specifically, we used eye-tracking glasses to record the gaze of participants as they navigated the real-world (Experiment 1), and while they were engaged in a short interview-style conversation with an experimenter (Experiment 2). In addition, we examined visual biases to three posters depicting social (direct vs. averted gaze) and non-social scenes during the conversation. Results reveal peoples' real-time gaze biases towards dynamic social and non-social objects in Experiment 1, and eye movement patterns that underlie joint attention and gaze allocation to a conversational partner's eyes/face in Experiment 2.

24. The supramarginal gyrus in empathy and perspective taking

Guglielmo Calvini & Richard Thomas

St Mary's University, London

Social empathy has been sometimes associated with the ability to detect someone else's visual perspective (Nielson et al., 2015; Mattan et al., 2016). To isolate the role of empathy in visual perspective-taking (VPT), we applied transcranial magnetic stimulation to the right supramarginal gyrus (SMG), an area associated with empathy abilities (Silani et al., 2013) during an unintentional VPT task. SMG stimulation resulted in lower accuracy and faster response times, regardless of the perspective to be reported or the consistency of self-other perspectives. Moreover, its effect interacted with participants' empathic tendencies. We discuss implications for how empathy is involved in perspective-taking.

25. Dissociating Perceptual Biases for Self and In-group Processing

Florence E. Enock¹, Patricia L. Lockwood¹, Jie Sui², Franziska Emmerling¹, Glyn W. Humphreys¹ and Miles R. C. Hewstone¹.

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Information relating to the self and social in-groups is given high priority in many cognitive processes. However, the commonality and distinction between self and group biases is unclear. Using fMRI, the present study measured neural responses to self vs. other and in-group vs. outgroup associations. We found enhanced activity in the vmPFC and ACC for the self vs. stranger, but not for in-group vs. out-group. However, neural processing related to dissimilar others was associated with overlap in the anterior insula. These findings support the notion that vmPFC is associated with a neural bias for encoding self-relevant associations but also that there is overlap in processing strangers and out-groups.

26. Two-person psychophysiology to study social interaction

D. Bolis and L. Schilbach

Max Plank Institute of Psychiatry, Munich

Due to conceptual and methodological constraints, neuropsychiatric research has so far largely focused on the individual. Here, we present a two-person-psychophysiology study for demonstrating ways of investigating both intra- and interpersonal processes in social interaction. Our analysis indicates that interpersonal coupling -in both decision-making and gaze behaviour- is higher in real-time social interaction compared to one-way social observation. We discuss these results within the context of the ‘dialectical misattunement hypothesis’, which considers the (a-)typical self not merely as (dis-)ordered function within single brains, but also as (mis-)attuned communication between people, emphasizing the need for a second-person perspective in neuroscience.

27. Neural processes underlying reading the mind in the eyes of children – introduction to the Nencki Children Eyes Test (NCET)

Anna Alińska^{1,2}, Jan Szczypiński^{1,3*}, Maciej Kopera³, Aleksandra Krasowska³, Aneta Michalska³, Hubert Suszek², Andrzej Jakubczyk³, Marek Wypych¹, Marcin Wojnar^{3,4}, Artur Marchewka¹*

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The “Reading the Mind in the Eyes” Test (RMET), a measure of a theory of mind (the ability to attribute mental states to other people) involves attribution of mental states to the photographs of the eye-region of adults. We compared brain activation during execution of RMET and a newly developed Nencki Children Eyes Test (NCET) with photographs of children. Preliminary findings revealed higher activation in adults for NCET than RMET in the left amygdala, left putamen and right inferior frontal gyrus. This indicates that recognizing mental states of other adults might be more automatized than recognizing mental states of children.

28. Bound Together: Social binding leads to faster processing, spatial distortion and enhanced memory of interacting partners.

Vestner, T., Tipper, S. P., Hartley, T., Over, H., and Rueschemeyer, S-A

University of York

We hypothesised that a binding process similar to perceptual grouping could bind people into interacting groups, facilitating faster processing and enhanced memory of social situations. First, using a visual search task we demonstrate more rapid processing for interacting pairs in an odd-quadrant paradigm. Second, using a spatial judgment task, we show that interacting individuals are remembered as physically closer than are non-interacting individuals. Finally, we show that memory retention of group-relevant and irrelevant features is enhanced when recalling interacting partners in a surprise memory task. These results are consistent with the social binding hypothesis, and alternative explanations are ruled out.