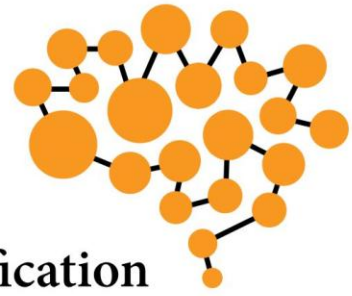


ACBM

Association for Cognitive Bias Modification



14-16 SEPTEMBER 2025

The 4th annual conference
of the Association for
Cognitive Bias Modification
(ACBM)



Abstract book

Association for Cognitive Bias Modification 4th Annual Meeting – Munich, 14-16 September 2025

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KEYNOTE LECTURES, SYMPOSIA,
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(in order of appearance)

Day 1; Sunday, 14 September

COGNITIVE BIAS MODIFICATION FOR DEPRESSION: RECENT FINDINGS AND FUTURE DIRECTIONS

Session type: **Keynote lecture**

Time: 13.30-14.30, Sunday, 14 September

Location: W201

Speaker: **Christopher Beevers**, University of Texas at Austin

This talk critically examines the current state of cognitive bias modification (CBM) for depression, highlighting findings from recent meta-analyses while noting their methodological limitations. A central focus is the complexity of applying CBM in the context of depression, including the heterogeneity of diagnostic presentations and the inconsistent links between specific symptoms and cognitive biases. To enhance the effectiveness of CBM, I propose several strategies: recruiting participants based on the presence of relevant biases, targeting self-referent cognitive processes, conducting symptom-level analyses, personalizing intervention stimuli, and integrating CBM with traditional cognitive behavioral therapy (CBT). I conclude by outlining key priorities for advancing the field—improving study quality, tracking cognitive change during CBM, and evaluating real-world outcomes.

ATTENTION ALLOCATION IN PSYCHOPATHOLOGY WHEN USING SOCIAL MEDIA PLATFORMS

Session type: **Symposium**

Time: 14.40-16.00, Sunday, 14 September

Location: W201

Session Chair: **Amit Lazarov**, Tel Aviv University

Aberrant attention allocation has been implicated in the etiology and maintenance of different psychopathologies, including depression and social anxiety. As such, it has been widely examined in research, with extant studies mostly using traditional lab-based eye-tracking tasks mimicking the concrete or physical external world. Yet, the world we live in is vastly changing with social media platforms (SMPs; Facebook, Instagram, etc.) becoming a significant and integral part of our daily lives. However, assessing processes of attention allocation in this ever-growing novel environment is still relatively scarce. In this symposium, we will present three works exploring attention allocation during SMP usage in depression and social anxiety. The first talk will present two studies exploring the attention allocation of socially anxious and control participants to social and non-social cues. In Study 1, social and non-social pictures were presented within a genuine Facebook profile page (a replication study) while in Study 2 the same set of stimuli were presented within a non-social context, namely an online news website. The second talk will examine the effects of social evaluation/feedback given on Instagram on the attention allocation processes of socially anxious and non-socially anxious control participants while engaged in an unrelated reading comprehension task. The third talk will present two studies exploring attention allocation to dysphoric and positive stimuli (i.e., pictures) presented within two realistic, digital contexts - a news website and an Instagram profile page

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Attention Allocation in Social Anxiety When Using Social Media Platforms (SMPs) – The Effect of Social Context

Speaker: **Amit Lazarov**, Tel Aviv University

Objective: A previous eye tracking study on attention allocation in social anxiety when using a social media platform, namely Facebook, has shown attention avoidance tendencies. While this study marks an important advancement in current knowledge, additional research efforts are still needed to further establish and substantiate these initial findings. This constitutes the overarching aim of the present research. Specifically, two ‘follow-up’ studies were conducted – a replication study (Study 1) and an elaboration study exploring the effect of the social nature of the context (Study 2).

Method: In Study 1 socially anxious participants (n=30) and nonanxious controls (n=30) freely viewed a set of 12 socially relevant and 12 neutral stimuli presented within a genuine Facebook profile page. In Study 2 a new sample of socially anxious and nonanxious controls participants freely viewed the same set of stimuli but presented within an internet news website, not a social media platform. In both studies we compared participants' dwell time (in seconds) on each stimulus type.

Results: In Study 1, socially anxious participants, compared with nonanxious controls, presented attentional avoidance of social relevant stimuli, replicating the results of the original Facebook study. Conversely, in Study 2 no group differences emerged in attention allocation to the social and non-social stimuli, with both groups devoting more attention to the social cues.

Conclusion: The social nature of the context in which stimuli are presented affects attention allocation patterns in social anxiety, which bears implications for attention bias modification training in the disorder.

Can't Look Away – The Effects of Social Media Cues Signalling Social Evaluation on the Attention Allocation of Socially Anxious Individuals

Speaker: **Hadar Hallel**, Tel Aviv University

Objective: Research on attention allocation to signs of social feedback in social anxiety has shown avoidance of these signs. Yet, our social world is vastly changing. Physical in-person encounters are no longer the sole medium for social interactions, as social media platforms have become a significant part of social life. Yet, assessing the effects of social evaluation/feedback on attention allocation in social anxiety in this novel environment is still scarce.

Method: Socially anxious and nonanxious participants completed a reading comprehension task while an Instagram page (unrelated to the task) was concurrently visible on the computer screen. Critically, the Instagram page included an image reflecting participants' personal features (a personalized portfolio), which received "ongoing" mock social evaluation (in the form of "Likes") while participants completed the reading comprehension task. Using eye-tracking methodology, we monitored participants' attention allocation to the Instagram page, computing the total number of visits to, and the total time spent on, the Instagram page. We then divided the Instagram page to three complementing areas – the "Like" icon; the personalized portfolio image; and the rest of the page – and repeated the same analyses.

Results: Socially anxious participants exhibited greater attention allocation to the Instagram page, manifesting in both attentional indices (visits, dwell time), which was specifically driven by the Like icon. Results were not affected by participants' daily Instagram usage time.

Conclusion: Socially anxious individuals are biased toward signs of social evaluation/feedback when on SMPs, diverging from prior research on attention allocation during 'concrete/real' social evaluative contexts.

Beyond the Lab: Depression, Attention, and Emotional Content in Everyday Media

Speaker: **Shani Lavi**, Tel Aviv University

Objective: Research on attentional biases in depression consistently shows a “double bias”: increased attention to negative stimuli and reduced attention to positive stimuli, contributing to the onset and maintenance of major depressive disorder (MDD). However, most prior studies rely on artificial stimuli that may not reflect everyday experiences. The present research aims to extend this line of work by examining attention allocation in two realistic, digital contexts.

Study 1: Students with high and low depressive symptoms freely viewed a simulated news website containing positive and negative headlines and were then asked to choose which articles to read. Results revealed that

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participants with high depressive symptoms spent less time viewing positive headlines and more time on negative ones. Moreover, they also chose to read fewer positive articles compared to the low-symptom group.

Study 2: Participants viewed an Instagram profile featuring emotionally valenced, realistic images. The high depression group spent more time looking at sad images and less time on happy ones. The groups also showed different attention patterns across categories and over time.

Conclusion: Across both studies, individuals with elevated depressive symptoms showed reduced attention to positive content and increased attention to negative content. These findings align with past research on attentional biases in depression but extend them by demonstrating similar patterns in ecologically valid, realistic settings. This highlights the importance of examining attentional processes in contexts that mirror daily life, such as news media and social platforms, and suggests potential targets for intervention in digital environments.

COGNITIVE BIASES RELATED TO BODY DISSATISFACTION – FROM ASSESSMENT TO MODIFICATION

Session type: **Symposium**

Time: 14.40-16.00, Sunday, 14 September

Location: V002

Session Chair: **Anca Sfärlea**, LMU University Hospital

Despite their etiological relevance and potential in augmenting treatment, cognitive biases and their modification across body dissatisfaction and related disorders remain understudied. Thus, this symposium explores cognitive biases in this field across different dimensions and populations, spanning both assessment and modification protocols.

Fanny Dietel presents an eye-tracking study on attention biases for one's own vs. a peer's body in adolescent females and males. Although male, vs. female, adolescents displayed a less deficit-oriented viewing pattern, both genders reported lower body dissatisfaction after viewing pictures of their own body, informing gender-related prevention protocols. Anca Sfärlea discusses a study examining body-related cognitive biases at different levels of information processing in adolescents with anorexia nervosa. This study lays the groundwork for an ongoing randomized controlled trial investigating whether modifying interpretation biases can reduce body dissatisfaction. Peter de Jong presents a study examining whether repeated exposure to disgust-focused autobiographical body memories in women with high self-disgust promotes body acceptance. Results showed that while disgust elicited by body-related memories decreased, state disgust towards the body only declined after neutral exposure, and reactive avoidance increased, suggesting that addressing avoidance may be key to enhancing intervention efficacy. Irina Masselman covers a study investigating whether a masked computerized counterconditioning procedure that paired female masked body images with smiling faces could improve body image in women with negative body evaluations. Results showed no significant improvement in body image, possibly due to participants' awareness and limitations of masking, highlighting the need for further research into the effectiveness of counterconditioning.

Gender-Specific Differences in Body-Related Attention Allocation in Adolescents: An Eye-Tracking Study

Speaker: **Fanny Alexandra Dietel**, Osnabrück University

Objective: Although previous research has demonstrated biased body-related attention allocation in female adolescents, there is a lack of studies examining these patterns in male adolescents. Considering the growing body of evidence highlighting high levels of body dissatisfaction among male adolescents and findings that biased body-related attention perpetuates such dissatisfaction, this study aims to address this research gap.

Method: Eye movements of male adolescents (n = 42) and female adolescents (n = 43) were recorded as they viewed images of their own body and a peer's body. State measures of body satisfaction and affect were collected for each condition.

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Results: Results showed that boys, compared to girls, spent less time fixating on unattractive areas of their own body. Further, boys allocated equal attention to attractive and unattractive areas of both their own and a peer's body, while girls exhibited a more deficit-oriented attention pattern. Regarding state measures, boys were less negatively affected by viewing body images than girls. However, both genders reported lower body satisfaction after viewing their own body compared to a peer's body.

Conclusion: Overall, these findings provide evidence of gender differences in body-related attention allocation, with boys potentially displaying a more self-serving attention pattern. Nonetheless, the negative impact of viewing one's own body, as observed in both genders, highlights the importance of addressing body image concerns in male adolescents, for example, through tailored prevention programs.

Cognitive biases in adolescents with anorexia nervosa – the KOALA studies

Speaker: **Anca Sfärlea**, LMU University Hospital

Objective: Anorexia nervosa (AN) is characterized by dysfunctional cognitive biases but these have rarely been investigated in adolescents with AN. The first KOALA-study systematically assessed cognitive biases in adolescents with AN and addressed the questions of content-specificity (i.e., do biases occur only for eating disorder-related information?) and disorder-specificity (i.e., are biases unique to individuals with AN?).

Method: Cognitive biases on three information processing levels (attention, interpretation, memory) and for two types of information content (eating disorder-related, non-eating disorder-related) were assessed within a single experimental paradigm based on the Scrambled Sentences Task. 12-18-year-old adolescents with AN (n = 40) were compared to a healthy (HC; n = 40) and a clinical (girls with depression and/or anxiety disorders; CC; n = 34) control group.

Results: Both clinical groups (AN and CC) showed pronounced negative interpretation and memory biases compared to the HC group, for both disorder-related and non-disorder-related information.

Conclusion: The results support the hypothesis that adolescents with AN show negative cognitive biases but these were not limited to disorder-related information. Adolescents with depression and/or anxiety disorders showed similar biases, suggesting them to be transdiagnostic phenomena. Based on these results, an ongoing randomized-controlled study (KOALA II) investigates if the identified interpretation biases can be experimentally modified and body dissatisfaction can be changed thereby, which would provide evidence for cognitive biases indeed representing maintaining mechanisms in adolescent anorexia nervosa.

Repeated exposure to body-related memories in women with high body-related self-disgust: Impact on disgust, avoidance, and acceptance

Speaker: **Peter de Jong**, University of Groningen

Objective: Disgust-based body image concerns can bias autobiographical memory towards the recall and avoidant processing of disgust-related memories of the own body. Repeated exposure to such memories may help breaking avoidance and promote the habituation of disgust, thereby lowering body concerns.

Method: Using a pre-post within-participant experimental design, we tested if repeatedly exposing women with high self-disgust (N = 61) to disgust-focused body memories vs. neutral memories led to a reduction in disgust and reactive avoidance, together with an increase in body acceptance.

Results: Contrary to expectations, state disgust towards the body itself only decreased following exposure to neutral memories. Yet, disgust elicited by body-related memories decreased following repeated exposure to both neutral and body memories. Although acceptance was not found to significantly change in either exposure session, pre-post decreases in state disgust were associated with increases in acceptance following the disgust-focused exposure. In contrast to expectations, reactive avoidance increased from pre to post in the disgust-focused exposure.

Conclusion: Overall, the results indicate that repeated exposure to disgust-focused body memories may help reduce disgust elicited by these memories and promote body acceptance. Yet, the effect of this repeated exposure to body memories did not extend to changing state disgust towards the body, possibly due to reactive avoidance. Currently we are testing if providing participants with a rationale for the efficacy of the computerized exposure intervention, thereby emphasizing the importance of not giving in to the inclination to avoid disgust, may help improve the efficacy of this memory bias modification procedure.

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The effectiveness of a masked counterconditioning approach to alleviate body dissatisfaction in women with high body image concerns

Speaker: **Irina Masselman**, University of Groningen

Objective: The prevalence of a negative body image is high among women, and there is a need to improve current body image interventions. Two studies using a computerized counterconditioning (CC) procedure to strengthen the association between women's body pictures and social approval cues showed promising results but additional studies failed to (conceptually) replicate these findings. One explanation could be that attentional biases towards negative, belief-confirming information hinder evaluative learning. The present study therefore tested if a masked CC procedure is effective in improving women's body image.

Method: In the experimental condition, masked body pictures of women with a negative body image (n = 75) were systematically followed by smiling faces, whereas neutral body-unrelated control pictures were followed by a blank screen. In the control condition (n = 71), both own body and control pictures were followed by a blank screen.

Results: Participants in the experimental condition did not report a more positive evaluation of their body (pictures) nor showed stronger positive automatic body evaluations after CC than participants in the control condition.

Conclusion: The findings provided no support for the idea that masked CC can be used to reduce a negative body image. However, many participants did not remain fully unaware of their pictures during conditioning. There is accumulating evidence that the used masking technique struggles to suppress affectively salient stimuli. More research is therefore necessary to determine the usefulness of masked CC as a body image intervention, and to establish the optimal settings for reliable suppression of affective stimuli.

COGNITIVE BIAS MODIFICATION – TARGETED BIASES AND RELATED PROCEDURES

Session type: **Individual Oral Presentations**

Time: 16.15-17.15, Sunday, 14 September

Location: W201

Session Chair: Nili Mor, The Hebrew University of Jerusalem

The association between stress reactivity and interpretation biases in children of parents with depression

Speaker: **Belinda Weber**, LMU University Hospital

Objective: Models for depression could be improved through a better understanding of how cognitive, biological and environmental vulnerability factors influence one another. This project experimentally tests whether negative interpretation biases have an impact on stress reactivity in the children of parents with depression.

Method: Children aged 10-14 years who have one parent with a current or previous depression diagnosis and are mentally healthy themselves are randomly assigned to either: an interpretation bias intervention (n = 40) or a structurally similar placebo intervention (n = 40). The interpretation bias intervention consists of a short lab-based cognitive reappraisal of interpretations training, a four-week app-based Cognitive Bias Modification of Interpretations intervention and interpretation bias specific if-then plans. Interpretation bias is assessed before and after training using the Scrambled Sentences Task. The effect of the intervention on participants' stress response is assessed immediately before, during and after the Trier Social Stressor Test for Children.

Results: Data collection will be complete in July 2025. We hypothesise that children who participate in the interpretation bias intervention will display a positive shift in interpretation bias and this, in turn, will alter their stress response. Children who receive the placebo intervention are expected to show smaller positive shifts.

Discussion: The findings of the present study will contribute to models of familial depression transmission as well as informing preventive interventions. If training a more positive interpretation bias subsequently alters

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participants' stress response, then incorporating such tools may increase the efficacy of existing preventive interventions.

Investigating the neural mechanisms underpinning Cognitive Bias Modification for facial expressions as an adjunct therapy to SSRIs in depression

Speaker: **Charlotte Crisp**, University of Bristol

Objective: Antidepressant drugs are most effective when combined with cognitive therapies. Our Cognitive Bias Modification (CBM) intervention induces positive biases when viewing emotional facial expressions and can be delivered remotely, online and at scale. We aimed to test the neural mechanisms of this intervention using fMRI as a potential adjunct therapy to SSRIs

Method: Fifty-nine participants (aged 18-55) with a new diagnosis of depression and prescription of SSRI medication (within 6 months) were recruited to this Randomised Controlled Trial. Participants completed five sessions of 'active' (n=28) or 'sham' (n=31) CBM over a 1-week period before performing a facial emotional processing task during fMRI scanning. Neural activity in bilateral amygdala and medial prefrontal cortex (mPFC) regions of interest was compared between CBM groups for happy vs fearful faces.

Results: Preliminary results show the active CBM group differed in mPFC response to happy vs fearful faces, compared to sham CBM group, which was driven by a reduced response to happy faces and increased response to fearful faces. No differences were observed in bilateral amygdala. Neural activity was also related to a robust CBM training effect (positive shift in emotional facial expression recognition at 4-week follow-up).

Conclusion: Our CBM intervention activated a key brain region involved in enhanced regulatory control of negative emotional facial expressions, similar to other psychological treatments for depression. This suggests it has potential to be combined with antidepressant medication to deliver synergistic effects for people with depression. Future work focused on optimising the CBM training effect would be beneficial.

Enhancing attentional disengagement from threat: A novel online paradigm for Attention Bias Modification training

Speaker: **Mario Carlo Severo**, Leiden University

Objective: Anxiety disorders often involve dysfunctional attention to threats. Recently, attention bias modification (ABM) training, a computer-delivered treatment targeting this bias, has emerged as a practical and cost-effective option. However, commonly employed ABM tasks produce inconsistent outcomes. This study introduces an alternative task aimed to enhance attentional disengagement from threat among individuals with subclinical levels of social anxiety.

Methods: We recruit 60 participants for a preregistered online experiment where they perform a go/no-go-like visual search task, exposing them to either disgusted or neutral faces. Reaction times (RTs) and accuracy rates for these emotional faces are compared during pre- and post-training phases using a linear mixed model. Moreover, we examine the relationship between task performance and psychometric indices of emotional tendencies (PANAS) and attention bias (ABQ) using structural equation modeling.

Results: We expect faster RTs in response to disgusted faces compared to neutral ones post-training. We also expect task performance to show strong relationship with negative emotional tendency and ABQ scores.

Conclusion: Overall, our proposed task offers a promising avenue to augment ABM training and alleviate anxiety symptoms.

The Effects of Digital CBM-I on Interpretation Bias, Anxiety, and Depression: Findings From a Three-Level Meta-Analysis

Speaker: **Kaan Alp Karamanli**, King's College London

Objective: Depression and anxiety are highly prevalent, highlighting the need for scalable, self-administered interventions. Cognitive Bias Modification for Interpretation (CBM-I) targets core cognitive mechanisms and shows promise as a digital approach. However, its efficacy—particularly for depression and self-guided formats—remains debated. This systematic review and three-level meta-analysis synthesizes recent evidence while addressing prior methodological limitations.

Method: A pre-registered systematic review and three-level meta-analysis (PROSPERO: CRD42023489316) was conducted per PRISMA guidelines. Published and grey literature were searched for studies using digital

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CBM-I reporting on interpretation bias, anxiety, or depression. Two independent researchers conducted the search and coding. Effect sizes (Hedges's g) were calculated, with negative values indicating symptom reduction.

Results: Digital CBM-I reduces negative interpretation bias (IB) with a medium-to-large effect size ($g = -0.64$, $SE = 0.05$, 95% CI $[-0.74, -0.53]$), and anxiety ($g = -0.26$, $SE = 0.04$, 95% CI $[-0.34, -0.18]$) and depression ($g = -0.25$, $SE = 0.05$, 95% CI $[-0.35, -0.14]$) with small-to-medium effect sizes. All effects were sustained at follow-up regardless of follow-up duration. The effects were substantially larger in clinical samples for depression and anxiety (vs subclinical and healthy) and in auditory presentation (vs verbal; only for depression).

Conclusion: Digital CBM-I significantly reduces interpretation bias, anxiety, and depression, with effects sustained at follow-up. Unlike in the previous meta-analyses, effects on depression and anxiety were comparable and larger in clinical samples. These findings support digital CBM-I as a promising intervention for anxiety and depression in clinical populations.

ASSESSING ATTENTION BIASES IN PSYCHOPATHOLOGY – NOVEL TASKS AND INSIGHTS

Session type: **Individual Oral Presentations**

Time: 16.15-17.15, Sunday, 14 September

Location: V002

Session Chair: **Julian Basanovic**, University of Exeter

A Novel Assessment of the Precision of the Dot-Probe Attention Bias Measure

Speaker: **Nathan Pond**, University of Sussex

Attention bias is present in people with emotional disorders and linked to the maintenance of pathological worry as seen in generalised anxiety disorder (GAD). However, despite the clinical importance of attention bias, concerns have been raised regarding the poor psychometric reliability of bias measures. This presents a significant barrier to reliably researching this phenomenon...or does it? Further research has shown that for experimental cognitive measures, poor psychometric reliability is almost certain. Instead, we should focus on the precision of the measure (the ability of the task to consistently detect an effect common to all participants). In this talk I will present a study designed to assess the precision and psychometric reliability of the probe-based bias measure, to ascertain its utility as an experimental measure. Participants ($N = 69$) were presented a probe-based attention bias measure, comprising 96 threat-neutral word pair trials. A Bayesian linear mixed effects model was fit to the probe measure trial data, and indices of sample variance (between-subjects variability; within-subjects variability) were extracted from the model. These indices suggested that the group-level attention bias score was estimated with a high degree of precision (Cohen's $d = 1.38$). Conversely, the psychometric reliability of the measure was moderate (test-retest reliability = .54), with an estimated 740 trials required to obtain a criterion reliability of .9. These findings suggest that the probe-based bias measure is appropriate for use in measuring experimental group effects. However, to be used as an individual differences measure, a large number of trials would be required.

Attention or Choice? Anxiety-Linked Differences in Attentional Bias to Negative Information: Examining the Potential Role of Volitional Information Choice

Speaker: **Mahdi Mazidi**, The University of Western Australia

Objective: Recently, the Talking Heads Attentional Bias Assessment Task—based on a novel dual-probe paradigm and employing ecologically valid continuous video stimuli—has demonstrated excellent internal reliability (bootstrapped split-half of .94) and sensitivity to individual differences in anxiety. However, these findings have yet to be replicated. Additionally, because the task involves continuous video content reflecting experiences people encounter in everyday life, it remains unclear whether the observed effects reflect genuine attentional capture or are instead driven by volitional preferences. The present study replicated original findings and examined whether volitional information choice accounts for the anxiety-linked attentional bias observed.

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Method: 171 students varying in anxiety vulnerability completed a version of the Talking Heads Attentional Bias Assessment Task. In certain blocks, negative and benign videos were presented simultaneously, and a dual-probe approach was used to index attentional bias to negative information as in the original study. In other blocks, participants chose which video to view, providing a measure of volitional choice bias.

Results: Original findings of good reliability of the attentional bias index and sensitivity to individual differences in anxiety were replicated. Crucially, no significant association was observed between bias in volitional choice and anxiety, indicating that the attentional bias effect is not attributable to volitional preferences.

Conclusion: These findings provide evidence that the anxiety-linked attentional bias to negative information, as measured by the Talking Heads task, reflects attentional capture rather than volitional choice. The study also supports the task's utility as a reliable assessment tool sensitive to individual differences in anxiety.

Can involuntary distraction by threat-related stimuli in anxiety be a consequence of biased goal selection?

Speaker: **Chris Brown**, Bournemouth University

Traditionally, attentional biases towards threat-associated stimuli are thought to occur due to learned 'exogenous' affective salience. The current investigation, however, aimed to determine whether involuntary attentional biases could also be driven by the intentional preference for avoiding threat-related outcomes, versus seeking rewarding outcomes. To test this, a novel dual-target search paradigm was developed, in which participants searched for letters/objects which appeared in two response-irrelevant colours. Correct identification of the letter/object when the target appeared in one colour was rewarded with points, whilst correct responses to the other colour avoided an aversive loud noise. Though not required to perform the task, individuals wanting to prioritise threat-avoidance would have to allocate more attention towards the threat-associated colour to efficiently detect it. The voluntary balancing of these competing goals was measured through-out the task using self-report probes. The results revealed that intentional prioritisation of the threat-avoidance colour targets was linked to greater interference by task-irrelevant distractors matching this colour, when presented as peripheral flankers (Experiment 1; N=52), or as non-predictive spatial cues (Experiment 2; N=100). Further, in Experiment 2, it was found that anxious participants prioritised threat-avoidance more, and this reported prioritisation mediated the relationship between anxiety and attentional bias to the threat-associated colour distractors. Importantly, this relationship between anxiety and the threat attentional bias was abolished when given a novel neutral goal, confirming the goal-driven nature of the bias. The results are discussed in relation to theories of attentional biases in anxiety, and how goal-driven biases may be modified.

Investigating Biased Attention to Cues Signalling Emotional Information in Depression.

Speaker: **Julian Basanovic**, University of Exeter

Objective: Recent research has demonstrated that biased attention to cues signalling future negative information characterises anxiety, and can be measured with acceptable reliability (Basanovic, 2024). This raises the question as to whether such biases are present in other individual difference domains believed to be characterised by biased responding to information. The present study explored this question across participants who varied in depression.

Method: Across three studies participants who varied in self-reported depression (Study 1 N = 115, Study 2 N = 120, Study 3 N = ongoing). Participants completed an assessment of selective attention to cues indicating the imminent future location of positive faces (Study 1), positive scenes (Study 2), or negative faces (Study 3).

Results: Study 1 revealed that elevated depression was associated with reduced attentional bias toward cues signalling positive faces. Study 2 revealed that this effect was not present for positive scenes, indicating a social-valence specific effect. The reliability of attentional bias indices across studies was moderate to high ($r[\text{split-half}] = .57 \text{ to } .71$). Study 3 data collection is ongoing, and will reveal the presence of depression-linked biased attentional responding to negative emotional faces and so inform the specificity of the effect found in Study 1.

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Conclusion: At present these findings demonstrate that depression is characterised by a reduction in attentional preference toward cues signalling positive social information, and Study 3 will reveal whether this also holds for negative information. Avenues for future research will be discussed.

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Day 2; Monday, 15 September

NEGATIVE APPRAISALS IN THE CONTEXT OF TRAUMA AND PTSD – BRIDGING EXPERIMENTAL INVESTIGATION AND CLINICAL TRANSLATION

Session type: **Keynote lecture**

Time: 09.15-10.15, Monday, 15 September

Location: W201

Speaker: **Marcella Woud**, Georg-August-University of Göttingen

In this line of research, I investigate the role of negative appraisals in trauma and PTSD. My work integrates the development of improved assessment methods to better capture the characteristics and mechanisms of maladaptive appraisals, alongside translational research focused on computerized, mechanism-specific cognitive interventions. Initial studies in non-clinical samples used the trauma film paradigm and showed that positive training led to more adaptive appraisals, while negative training resulted in more maladaptive appraisals post-training, along with corresponding group differences in intrusive memories and distress, providing proof of concept. This approach was then extended to distressing autobiographical events and supported by studies exploring the underlying mechanisms of change. The program culminated in a randomized controlled trial with an inpatient PTSD sample, where positive CBM-App significantly reduced maladaptive appraisals and PTSD symptoms compared to a control condition. Reductions in negative appraisals were also associated with lower hair cortisol levels, suggesting links between cognitive and physiological processes. Together, these studies demonstrate a systematic translational pathway from experimental models to clinical application and support the potential of CBM-App as a scalable, mechanism-based intervention for trauma-related disorders. In my keynote, I will present an overview of these research developments and discuss future directions, including ongoing efforts to refine and expand the intervention's scope and implementation.

EFFECTS OF TRAUMATIC STRESS ON BRAIN AND COGNITION

Session type: **Symposium**

Time: 10.30-11.50, Monday, 15 September

Location: W201

Session Chair: **Yair Bar-Haim**, Tel Aviv University

Traumatic stress reshapes brain connectivity and affects the attentional threat-monitoring system. This symposium will bring together three converging lines of research that collectively sheds light on the cognitive and neural mechanisms underlying adaptation to traumatic stress. The presented studies can inform the development of targeted attention bias modification interventions for PTSD psychopathology. Talk 1 will present findings from a whole-brain fMRI study of Israeli combat soldiers, revealing dynamic changes in neural connectivity that emerge during active military service and normalize following discharge. Talk 2 examines attention-bias variability (ABV) as a potential cognitive marker of PTSD. Using both reaction-time and eye-tracking methodologies, this study highlights the potential of eye-tracking ABV as a novel, reliable, and complementary measure of PTSD severity. Talk 3 will report results from a randomized controlled trial in veterans with PTSD comparing two attention bias modification treatments: Reaction-time-based intervention (a dot-probe variant), and an eye-tracking-based intervention (Gaze-Contingent Music-Reward Therapy - GCMRT), with a control condition. The symposium will offer insight into trauma-related alterations in brain connectivity and attentional processes and the ways these can inform the development of novel therapeutic strategies for PTSD.

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Decreased Uniqueness of the Neural Connectome in a Highly Cohesive Environment

Speaker: **Noga Yair**, Tel Aviv University

Objective: The human functional connectome, derived from functional magnetic resonance imaging (fMRI), manifests in ways both sufficiently unique and stable to be labeled a “fingerprint”. While this leads some to view the connectome as a neural proxy of the self, no research has yet examined connectome stability following exposure to extreme experiences or environments.

Method: To test whether the functional connectome retains its fingerprint-like properties after extreme environmental exposure, we tracked resting-state fMRI data across four time-points in two groups: infantry soldiers undergoing military service vs. university students in stable academic settings. Functional connectomes were computed using parcel-wise Pearson correlations (Schaefer et al., 2018), and fingerprinting success was defined as the proportion of individuals most similar to their own baseline over time. We further examined stability (within-subject similarity), uniqueness (between-subject dissimilarity), and the contribution of specific neural networks.

Results: Students consistently exhibited high fingerprinting success at all time-points. Soldiers showed a significant decline following one year of close-knit service, with recovery over time, peaking post-discharge. This disruption was driven by decreased neural uniqueness rather than reduced stability. The dorsal attention and executive control brain networks positively contributed to fingerprinting across groups and time-points, while the default mode network reduced fingerprinting accuracy for soldiers at their period of peak social cohesion.

Conclusion: These findings suggest that environmental context can transiently disrupt the functional connectome’s individuality, particularly under conditions of extreme social and physical proximity. The connectome is not fixed but dynamically shaped by our surroundings, even during young adulthood.

Attention Bias Variability as a Cognitive Marker of PTSD: A Comparison of Eye-Tracking and Reaction Time Methodologies

Speaker: **Tal Lev**, Tel Aviv University

Objective: Identification of reliable behavioral markers for posttraumatic stress disorder (PTSD) can offer objective measures beyond self-reports to aid in diagnosis, treatment, and prevention. Attention bias variability (ABV), defined as fluctuations in attention toward or away from threat-related stimuli, has been associated with PTSD. Reaction time-based ABV (RT-ABV) has been extensively studied and shown to be linked with PTSD symptomatology. An eye-tracking-based ABV index (ET-ABV) was only recently introduced, and results show that it may be associated with trauma exposure rather than with PTSD symptoms. However, these two ABV types were yet to be studied within the same sample. The current study explored the association between trauma exposure, PTSD symptom severity, and ABV measures, applying both the classic RT-ABV and the new ET-ABV in the same sample.

Method: Participants with PTSD (n=41), trauma-exposed healthy controls (TEHC; n=71), and non-exposed healthy controls (HC; n=38) completed an eye-tracking free-viewing matrix task and a manual response-based dot-probe task using the same threat-related stimuli (angry faces) across tasks.

Results: Results indicate that both RT-ABV and ET-ABV were significantly higher in participants with PTSD compared to participants in the TEHC and HC groups, with no significant difference between the latter two groups. Additional analyses indicate that although moderately correlated, each of the ABV measures explains unique portions of the variance in PTSD severity.

Conclusion: This study replicates and extends prior findings on the association between ABV and PTSD and highlights the potential of ET-ABV as a novel and reliable marker for PTSD severity.

Efficacy of response-time (RT)-based and eye-tracking (ET)-based ABM for veterans with PTSD: A randomized controlled trial

Speaker: **Chelsea Dyan Gober Dykan**, Tel Aviv University

Objective: Posttraumatic stress disorder (PTSD) is a chronic and debilitating psychopathology. Evidence from clinical trials suggest that treatment success rates are particularly low among veterans, with ~50% retaining a PTSD diagnosis after treatment. Such findings have sparked an endeavour to identify new targets for therapeutic intervention. Previous randomized controlled trials (RCTs) using response-time based ABM (RT-

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ABM) have delivered mixed results regarding clinical improvement. Eye-tracking based ABM called gaze-contingent music reward therapy (GC-MRT) has shown promising clinical improvement in the treatment of social anxiety disorder but has not yet been tested for PTSD. This presentation will focus on the findings of a randomized controlled trial that examined the efficacy of RT-based ABM and GC-MRT relative to a sham ET-based control in veteran patients with PTSD.

Method: This 3-arm RCT (N=120) examined the efficacy of RT-based ABM and GC-MRT relative to a sham ET-based control in veteran patients with PTSD. Treatments consisted of eight sessions. Clinician-Administered PTSD Scale 5 (CAPS-5) severity score and PTSD diagnosis were the primary outcomes. Secondary outcomes included self-reported trauma (PCL-5) and depression (PHQ-9) symptoms. Threat-related attention and symptom data were collected at baseline, post-treatment, and a three-month follow-up.

Results: Data collection is in its final stages and will be analysed for presentation at the ACBM 2025 conference.

Conclusion: TBD

COGNITIVE BIAS MODIFICATION IN SMOKING: AN OVERVIEW OF THE CURRENT STATE AND NOVEL AVENUES

Session type: **Symposium**

Time: 10.30-11.50, Monday, 15 September

Location: V002

Session Chair: **Edwin Schenkel**, Georg-August-University of Göttingen

In the field of substance use disorders, the application of Cognitive Bias Modification (CBM) has proven promising. Particularly, modifying approach-avoidance tendencies as part of inpatient treatment for alcohol use disorder has evolved into a recommended therapy by national treatment guidelines. The efficacy and clinical value of CBM in the field of nicotine dependence, however, remains unclear. This symposium presents an overview of the current state as well as novel avenues of CBM research in nicotine dependence, including various automatic processes playing crucial roles in the development and maintenance of the disorder. The first two talks focus on the efficacy and clinical value of Approach Bias Modification in standard nicotine cessation treatment (Charlotte Wittekind) and individuals at increased risk (i.e., alcohol dependent individuals who smoke; Edwin Schenkel). Further, smoking behaviour is steered by deficits in inhibitory control. Aiming to strengthen inhibitory control in smokers, Franziska Motka presents a randomized-controlled trial examining the efficacy of general and smoking-specific inhibitory control training as an add-on to nicotine cessation treatment and its underlying working mechanisms. Finally, Lana Mrkonja explores the interplay between attentional biases for substance-related rewards, motivational state, and reward valuation. In her study, she examines the persistence and modulation of attentional capture for both primary and secondary rewards, and how these effects relate to nicotine dependence. In turn, this might generate novel ways for modifying attentional processes in nicotine dependence.

Approach-Bias Modification as an Add-on to Smoking Cessation Treatment: A Randomized-Controlled Double-Blind Study

Speaker: **Charlotte E. Wittekind**, LMU Munich

Objective: According to dual-process models of addiction, substance use disorders like smoking are driven by strong impulsive processes, for example, approach-biases toward smoking-related stimuli. Computerized trainings termed Cognitive Bias Modification aim to directly modify these biases. While Approach-Bias Modification (ApBM) as an add-on to standard treatment has significantly increase long-term abstinence in alcohol use disorder (AUD), its efficacy as an add-on in smoking remains unclear. The aim of this trial was to investigate whether adding ApBM to standard treatment in smoking would increase 6-months abstinence.

Method: The study was a randomized-controlled, double-blind superiority trial. In total, 351 participants attended standard smoking cessation treatment (ST) and were then randomized to receive either ApBM (ST+ApBM, n=119), Sham training (ST+Sham, n=115), or not additional training (ST only, n=117). Prolonged 6-month abstinence served as primary outcome. Approach-biases were assessed pre- and post-intervention and at follow-up.

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Results: Abstinence rates at the 6-month follow-up were 19% for ST+ApBM, 17% for ST+Sham, and 16% for ST only. Intention-to-treat analyses (ITT, logistic regression) revealed no significant differences between groups. Approach-biases were not significantly more reduced in ST+ApBM compared to the control groups. **Conclusion:** These findings raise doubts about the efficacy of ApBM as an add-on to smoking cessation treatment for increasing long-term abstinence. Therefore, positive effects of ApBM in AUD do not apply to tobacco use disorder.

Nicotine Avoidance Training in Alcohol-dependent Patients: First results

Speaker: **Edwin Schenkel**, Georg-August-University of Göttingen

Objective: Almost 80% of alcohol-dependent patients in treatment are smokers (PAD). This comorbidity causes severe health consequences, high mortality rates along with extremely high costs to society. Further, if PAD achieve abstinence from alcohol, abstinence from tobacco is a rare exception, even after receiving smoking cessation treatment. Simultaneously, PAD have an increased risk of relapse into drinking despite of having successfully completed treatment for alcohol use disorder (AUD). Central to addictive behaviors is that they are strongly governed by automatic processes, which play a major role in the maintenance of both AUD and nicotine dependence. Cognitive Bias Modification (CBM) has shown to effectively reduce automatic approach of alcohol stimuli as well as relapse rates one year after treatment. However, to date, the presence of approach bias toward tobacco stimuli has not been considered in PAD, even when they are engaged in evidence-based smoking cessation. Given the high comorbidity of alcohol and nicotine dependence in AUD, it is therefore essential to also modify the approach bias toward nicotine stimuli to solidify the effectiveness of smoking cessation and abstinence from tobacco in the long term.

Methods: This randomized-controlled, double-blind (feasibility) study examines the effectiveness of nicotine CBM training (CBM-TAT) for modifying automatic approach tendencies in nicotine dependence as a specific add-on intervention to an established cessation program (Rauch Frei®) in PAD undergoing inpatient alcohol cessation treatment.

Results and Conclusions: This presentation presents initial results of the CBM-TAT, as well as insights into the process within the clinical setting.

Efficacy and working mechanisms of a Go/No-Go task-based inhibition training in smoking: A randomized-controlled trial

Speaker: **Franziska Motka**, LMU Munich

Objective: Deficits in inhibitory control contribute to smoking behavior. Inhibitory control training (ICT), which involves repeatedly inhibiting responses to general or substance-related stimuli, shows promise in reducing problematic substance use. This preregistered randomized-controlled trial is the first to investigate the efficacy of general and smoking-specific Go/No-Go task-based ICT on smoking behavior compared to control groups receiving no ICT. Three potential working mechanisms were examined: inhibitory enhancement, automatic stimulus-stop associations, and stimulus devaluation.

Method: Individuals who smoke (N = 122) were randomly assigned to complete 28 sessions of smoking-specific Go/No-Go, general Go/No-Go, Sham training, or to a Waitlist control condition. Clinical outcomes included daily cigarettes (primary outcome), carbon monoxide levels, tobacco dependence severity, and craving, assessed at post-intervention and 3-month follow-up.

Results: Go/No-Go training resulted in a significantly greater reduction in tobacco dependence and craving post-intervention compared to both control groups. The greater reduction in craving remained significant when compared to the Sham training group only. No significant effects of group were observed on daily cigarette consumption or carbon monoxide levels post-intervention. At the 3-month follow-up, no significant effects of group emerged. Smoking-specific Go/No-Go training did not outperform general Go/No-Go training. No working mechanism for clinical outcome improvements was identified.

Conclusions: Preliminary evidence suggests that (smoking-specific) GNG training reduces tobacco dependence severity and craving post-intervention in individuals who smoke compared to non-ICT-based control conditions. Its efficacy as an add-on in smoking cessation needs to be investigated.

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Effects of reward devaluation on value-modulated attentional capture (VMAC) in the Context of Tobacco Dependence

Speaker: **Lana Mrkonja**, University of Amsterdam

Objective: Value-modulated attentional capture (VMAC) refers to the automatic attentional orienting toward stimuli signaling a highly rewarding outcome. While this effect is well established for secondary rewards (e.g., money), less is known about how attentional capture operates for primary rewards (e.g., cigarettes, water), particularly in relation to motivational states like craving. This study examines the persistence and modulation of attentional capture for both primary and secondary rewards, and how these effects relate to nicotine dependence.

Method: Light and heavy smokers complete a VMAC task featuring both secondary and primary reward cues. In primary VMAC-trials, the color of the distractor signal that either a high-value reward (tobacco) or a low-value reward (water) is available on that trial. The value of rewards is controlled by participant's motivational state (i.e., craving). In secondary trials, the distractor color signals either high (10 cents) or low (1 cent) monetary reward. After the initial VMAC test, participants undergo tobacco-reward devaluation, followed by another set of the VMAC task.

Expected Results: We expect strong attentional capture by high-value distractors for both reward types. After tobacco-reward devaluation, monetary VMAC effects should persist, while tobacco-related attentional capture may persist (suggesting trait automaticity) or diminish (suggesting state sensitivity). Individual differences in nicotine dependence and craving levels are expected to moderate these effects.

Conclusion: This study investigates whether attentional biases for substance-related rewards depend on the current motivational state and reward valuation. It provides further insight into automaticity and flexibility in reward-related attentional processes, particularly in tobacco users.

APPROACH-AVOIDANCE BIAS – ASSESSMENT AND MODIFICATION IN DIFFERENT CONDITIONS

Session type: **Individual Oral Presentations**

Time: 12.00-13.00, Monday, 15 September

Location: W201

Session Chair: **Victoria Manning**, Monash University

Food craving reductions induced by mobile approach-avoidance training are stronger in those who struggle with their diet

Speaker: **Sercan Kahveci**, Paris-Lodron-University Salzburg

Objective: To aid individuals in their dietary goals using cognitive bias modification and ecological momentary assessment. In approach-avoidance trainings (AATs), harmful stimuli are avoided while healthy ones are approached, for example by respectively moving a phone away from or to oneself. We utilized such a mobile phone-based AAT to reduce food intake in a pre-registered randomized controlled trial.

Methods: We administered an AAT 6 times over 2 weeks to 156 participants to reduce intake of 6 “no-go-foods” and boost intake of 6 “go-foods”, chosen based on each participant's dietary goals. Controls received a placebo AAT in which all stimuli were equally often approached and avoided. Food craving and intake were measured daily during the training period, 4 days before and after, and once during a followup 1 month after training. Per-food approach bias was recorded before and after training, and during followup.

Results: Compared to placebo, active training reduced the magnitude of no-go-food craving without affecting how often craving occurred; those with low past dietary success and high restrained eating showed the strongest reduction. Active training also reduced approach bias for no-go-foods. Active training did not affect go-foods, there were no interpretable training effects for food intake, and no changes were maintained at followup.

Conclusions: We find support for the deployment of the AAT against food cravings, especially for those who struggle with their diet; it remains to future research how to translate this into a food intake reduction.

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Would you avoid a threat? Some kids might not: the possible connection between anger and approach tendencies in irritable youth

Speaker: **Reut Naim**, Tel-Aviv University

Objective: In a context of a perceived threat or provocation, both animals and humans' response may be broadly subdivided into approach and avoidance behaviours. While effective and evolutionary adaptive, enhanced and inflexible approach or avoidance tendencies may be clinically impairing. Indeed, automatic avoidance tendencies were found in anxiety disorders, however, research had yet to explore potential approach tendencies in irritability, characterized by proneness to anger and temper outbursts. The current study is the first to investigate approach response toward emotionally negative social cues among irritable and non-irritable youth.

Method: 77 youth (Age mean(SD)= 10.51 (2.01) executed an approach-avoidance task (AAT), using a new validated kids' version, where participants pushed or pulled pictures of angry, sad and emotional faces using a joystick. AAT scores were calculated with higher scores reflecting greater approach tendency. Clinical symptoms were assessed via self- and parent-report.

Results: A significant and moderate positive correlation emerged between anger trait and AAT effect-scores for angry faces ($r = 0.325$, $p = .010$, Cohen's $d = 0.7279$) across the whole sample, indicating that a larger individual expression of anger and irritability was significantly associated with approach response towards angry faces. This effect was found to be specific to angry faces compared to other negative positive emotional face stimuli.

Conclusion: These findings could expand current knowledge on behavioural markers related to irritable youth, demonstrating automatic approach responses specifically to angry faces among this population. Clinically, finding can potentially guide the development of more effective, targeted treatments for this population.

Approach bias covaries with affect on days with high craving

Speaker: **Mareike Röttger**, Paris-Lodron-Universität Salzburg, Austria

Objective: Food approach bias is the tendency to approach foods faster than to avoid them compared to objects. It has stable and fluctuating components, but few studies have investigated what drives these fluctuations. One potential factor is affect, which can influence eating in some individuals, known as (positive or negative) emotional eating. We investigated the relationship between affect and approach bias in daily life through ecological momentary assessment and a mobile approach-avoidance task. We hypothesized that this relationship is stronger for participants with the trait emotional eating pattern congruent with their current mood, for foods that are incongruent with dietary goals, and when foods have a higher hedonic value (i.e., are craved more).

Method: In 76 participants, we measured positive and negative affect and approach bias towards goal-congruent and -incongruent foods on nine days at midday, while food craving was assessed in the evening. Trait emotional eating was assessed using the Salzburg Emotional Eating Scale.

Results: There was no direct relationship between affect and approach bias, nor was this moderated by trait emotional eating or goal-congruency. Affect and approach bias covaried on days with high craving –negative affect predicted higher approach bias, while positive affect predicted lower approach bias, especially in participants respectively reporting high negative or low positive emotional eating (the latter reporting eating less when experiencing positive emotions).

Conclusion: Food approach bias covaries with affect depending on the day-level hedonic value of foods (food craving) and emotional eating tendencies of the individual.

Personalised approach bias modification (ApBM) during methamphetamine withdrawal treatment: a pilot randomised controlled trial.

Speaker: **Victoria Manning**, Monash University

Objective: ApBM has been shown to reduce relapse in residential alcohol treatment. To date, only one open-label pilot study has explored its application to people with methamphetamine use disorder (MUD). This study aimed to assess whether a novel, personalised form of ApBM, can improve abstinence rates post-discharge, relative to a sham-training condition.

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Method: This double-blind RCT aimed to recruit 100 patients with MUD from four withdrawal/short-term rehabilitation services. Participants were randomly assigned to 6 ApBM sessions using self-selected ‘approach’ stimuli (positive/goal-related images) and ‘avoid’ (methamphetamine) stimuli, or 6 sham-training sessions. Methamphetamine use was assessed pre and post intervention (4- and 12-weeks post-discharge), with past-month abstinence as the primary outcome. The trial was pre-registered (ACTRN12620000072910).

Results: Due to COVID-19 restrictions, only 24 (62.5% male; mean age 31.8) participants were recruited and randomised (10 ApBM; 14 Sham). The sample’s mean number of DSM-5 MUD criteria met was 10.1 (out of 11), indicative of severe MUD. Mean number of sessions was 5.0 for ApBM and 3.7 for sham. Of the 17 participants who completed a 1-month follow-up, 5/6 (83.3%) ApBM participants and 4/11 (36.4%) Sham participants were abstinent ($\chi^2=3.4$, $p=.06$). At 3-months, 3/7 (43.9%) of ApBM participants and 3/10 (30%) of Sham participants ($\chi^2=2.98$, $p=.59$) were abstinent.

Conclusion: Despite being underpowered to detect significant differences, the higher rates of abstinence are promising and warrant further investigation in larger trials.

ADDICTION-RELATED DISORDERS – ASSESSMENT AND BIAS MODIFICATION

Session type: **Individual Oral Presentations**

Time: 12.00-13.00, Monday, 15 September

Location: V002

Session Chair: Reinout Wiers, University of Amsterdam

Attentional Bias Towards Alcohol Advertising Causes Increased Consumption of Alcohol Through Its Impact on Craving

Speaker: **Mahdi Mazidi**, The University of Western Australia

Objective: Alcohol advertising can induce craving and increase consumption of alcohol, though individuals vary in their susceptibility. Recent findings suggest that attentional bias toward alcohol adverts predicts subsequent alcohol craving and consumption. However, methodological limitations leave key issues unresolved, including whether attentional bias to alcohol adverts causally impacts craving and consumption. This study tested the hypothesis that attentional bias to alcohol adverts increases their impact on alcohol consumption via craving, using an attentional bias manipulation approach.

Method: Seventy-one undergraduate students were exposed to beer and soft drink adverts in a dual advert viewing task designed to manipulate attentional bias towards or away from beer adverts. Following advert viewing, relative craving for beer versus soft drinks and preferential beer consumption were assessed. A mediation model examined whether attentional bias manipulation influenced consumption via craving.

Results: The attentional bias manipulation successfully induced selective attention differences, with participants in the “attend beer adverts” condition displaying an attentional bias towards beer adverts, and those in the “avoid beer adverts” condition showing an attentional bias away from beer adverts. Mediation analysis confirmed that the attentional bias manipulation influenced beer consumption following advert viewing via its effect on beer craving.

Conclusion: These findings provide evidence that attentional bias towards alcohol adverts causally influences alcohol consumption after viewing, and that this effect is mediated by craving. We discuss implications for targeted interventions aimed at reducing the harmful effects of alcohol advertising.

Targeting Interpretation Bias Through a CBT-Based Online Psychoeducation Program: Effects on Smoking Cessation Outcomes

Speaker: **Duygu Altin**, University of Amsterdam and Ege University

Objective: CBT places strong emphasis on interpretation bias, targeting negative interpretations through techniques like thought records, behavioural experiments and psycho-education, while also addressing other maladaptive cognitive biases. This study investigated the efficacy of a CBT-based online psychoeducation program that explicitly targets interpretation bias and related cognitive distortions contributing to smoking maintenance.

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Method: In a randomized controlled trial, 208 participants were assigned to receive either routine smoking cessation treatment alone (n = 105) or combined with the CBT-based online intervention (n = 103). The intervention included psychoeducation and cognitive restructuring exercises designed to help users identify and reframe biased interpretations linked to smoking. Primary outcomes were FNBT scores, daily cigarette consumption, and cessation success; secondary outcomes included mental well-being and HAPA stage of change. Final analysis included 61 completers. Analyses controlled for relevant demographic and clinical variables.

Results: Compared to controls, the intervention group showed significantly lower nicotine dependence ($B = -1.88$, $p = .018$), reduced daily cigarette use ($B = -6.47$, $p = .021$), and higher smoking cessation rates ($OR = 2.889$, $p = .046$).

Conclusion: The CBT-based online psychoeducation program effectively enhanced smoking cessation outcomes, warranting further research with larger samples to develop standardized clinical interventions. CBT's focus on cognitive biases, particularly interpretation bias demonstrates its broad therapeutic potential.

The role of selective interrogation of vaping-related information in vaping outcome expectancies and behaviour among young adults

Speaker: **Amelia Reynolds**, The University of Western Australia

Objective: Expectancies play a central role in the development and maintenance of addiction-relevant behaviours, such as vaping. These expectancies are often heavily influenced by information conveyed by others and, for young adults, Google, Reddit and social networking sites have become the typical source of such information. Such online platforms often present information in formats that require selective interrogation, i.e., users are presented a wealth of available information from which the user chooses information to selectively access. The present study examines the hypothesis that biased selective interrogation, favouring positive over negative information concerning the outcomes of engaging in vaping, contributes to positively (vs. negatively) biased expectancies about vaping, which in turn drive increased engagement in this behaviour.

Method: Young adults ($N \approx 160$) who do and do not vape were recruited. Participants completed a task in which they selectively interrogated a pool of positive and negative vaping-related information. Participants were required to choose half of the available information, and the proportion of positive information selected was taken as a measure of their selective interrogation bias. Lastly, participants expectancies were assessed.

Results: If the hypothesis is supported, the results will indicate that, the tendency to selectively interrogate more positive vaping-related information will statistically predict positivity of expectancies and in turn, statistically predict engagement in vaping.

Conclusion: Findings will be discussed with regards to limitations and potential implications for researchers and clinicians seeking to identify new targets for the prevention and intervention of vaping in young adults.

Toward Personalized Network-based interventions and Cognitive Bias Modification

Speaker: **Reinout Wiers**, University of Amsterdam

The symptom network approach in psychopathology holds promise for personalizing treatment (e.g., Roefs et al., 2022). In a recent proof-of-principle randomized controlled trial (RCT, Mansueto...Wiers, submitted), we tested the potential efficacy of a brief intervention for cannabis use disorders ($N=26$), in which Ecological Momentary Assessment (EMA)-based personal (symptom) networks and descriptive graphs were used in the experimental group, during two sessions of cognitive behavioral therapy (CBT), with a motivational interviewing (MI) therapeutic approach. In the control group the same was done in the standard way (treatment as usual, TAU), including a functional analysis based on what the client told the therapist (TAU also consisted of 2 sessions of CBT-MI, without personal network-based feedback). While both groups significantly reduced their cannabis use after the intervention, the experimental network-based group still scored lower 3 months later, while the TAU group was back at baseline (Time x Condition interaction, $p < .05$, for days cannabis used and grams cannabis used). One caveat in the interpretation is that the experimental group scored higher on depression symptoms at baseline. I will present the main findings of the study and explore how personalized CBM could be added to this personalized approach, based on the same EMA data

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(cf., Mansueto et al., 2023, JEP), in relation to the recently developed ABC-method (Wiers et al., 2020; Van Dessel et al., 2023; Pan et al 2025). We conclude that personalized interventions combining EMA-based networks and CBM hold promise in treating addictions.

A TRANSDIAGNOSTIC FRAMEWORK OF COGNITIVE BIASES IN ANXIETY AND BROAD PSYCHOPATHOLOGY

Session type: **Symposium**

Time: 14.00-15.20, Monday, 15 September

Location: W201

Session Chair: **Elinor Abado**, University of Goettingen

This symposium offers an integrated view of cognitive biases across anxiety disorders and broader psychopathology spectrum by uniting four complementary lines of work. First, a theoretical framework is presented describing the dynamic interplay between expectancies, cognition, affect, and behavior. This model highlights how such interactions contribute to expectancy-related traits and psychopathology, with implications for sustained cognitive bias modification. Second, a neurocognitive model of chronic loneliness is proposed, in which dysregulated oxytocin signaling and maladaptive social attention biases increase the salience of negative social cues, perpetuating a self-reinforcing cycle of loneliness. Third, findings from a CBT trial in patients with panic disorder show that panic-related interpretations but not associations are sensitive to intervention, with changes observed in both panic and other anxiety disorders, suggesting interpretations as a transdiagnostic cognitive marker. Fourth, a randomized controlled trial of cognitive bias modification for interpretation (CBM-I) in socially anxious individuals demonstrates that targeted training modifies interpretation bias and reduces some symptoms, as captured by self-report and behavioral outcomes. Results also reveal meaningful associations between cognitive bias and social anxiety at baseline. Together, these studies offer a comprehensive view of how distinct cognitive biases contribute to the maintenance—and potential change—of anxiety and related psychopathology, emphasizing their transdiagnostic relevance.

Toward a Framework of Expectancy Maintenance and Change: The Role of Affect, Behavior and Cognitive Biases

Speaker: **Erik Mueller**, University of Marburg

Expectancies shape experience and behavior from simple perception to complex cognition, affect, and motivated behavior. At the same time, cognition, affect, and behavior reflect how we manipulate, sample and interpret our experience, thereby affecting the likelihood that expectancies are challenged and subject to change or stabilization.

In this presentation, I will introduce a new theoretical framework that organizes how specific cognitive, affective, and behavioral biases contribute to the maintenance of (maladaptive) expectancies. I will then outline how this framework can enhance our understanding of broad expectancy-related personality traits and psychopathology, and discuss its implications for the interplay between cognitive bias modification and sustainable expectancy change.

Finally, I will present empirical findings consistent with the framework's assumptions. Specifically, I will share recent studies from our lab indicating that individual differences in (a) information-seeking biases toward expectancy-confirming, negatively valenced content and (b) the tendency to maintain versus revise negatively valenced expectancies following disconfirmation are associated with the magnitude of generalized negative expectancies and linked to the broad personality trait of neuroticism.

The Vicious Cycle of Loneliness: How Oxytocin and Attention Bias Fuel Chronic Feelings of Social Isolation

Speaker: **Dana Shamai-Leshem**, University of Haifa

Loneliness is the subjective experience of social isolation, regardless of the objective social connections one has. In its transient form, loneliness serves an adaptive purpose, motivating us to reconnect with others in the presence of a threat to our social bonds. However, for some people the desire to reconnect with others remains unmet and loneliness persists and becomes chronic. Such a chronic state of loneliness has been

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found related to various adverse health consequences, and with the increase of chronic loneliness worldwide the need to understand its mechanisms and identify targets for interventions has become urgent. In this presentation, I will combine cognitive, neuroimaging, and biological findings to suggest a neurocognitive model that explains vulnerability to chronic loneliness. In the center of this model lies the interplay between the neuropeptide oxytocin and biased attention. Relying on extant literature and findings from our lab, I will outline how the combination of maladaptive social attention bias and dysregulations in the oxytocin system amplify the salience of negative social cues and trap some individuals in a self-reinforcing loop of loneliness. This model suggests a new framework to study loneliness, and clear targets for future interventions

Unchanged Associations, Altered Interpretations: Cognitive Responses to CBT in Panic and Anxiety Disorders

Speaker: **Marcella Woud**, University of Goettingen

Objective: The aim of the current randomized controlled trial was to characterize treatment-induced changes in panic-related associations and interpretations, as they play a crucial role in the course of panic disorder.

Method: Eighty-six patients completed two assessment sessions, i.e., pre-post CBT. Those diagnosed with panic disorder were randomly assigned to immediate CBT or a waitlist. Patients of the waitlist delayed treatment until after the second assessment session. A third group included patients with an anxiety disorder and these patients received immediate CBT. In each assessment session, participants completed two association-based tasks and two interpretation-based tasks related to panic, plus symptom questionnaires and a hyperventilation challenge with concurrent psychophysiological recording.

Results: Scores on panic-related association tasks remained unchanged across groups and sessions. In contrast, panic-related interpretation scores decreased significantly for both patient groups that received CBT, with larger effects in the panic group compared to the anxious control group. The panic waitlist group showed no change. Additional analyses are currently in progress.

Conclusion: The current results emphasize the unique role of panic-related interpretations, which were sensitive to CBT in both anxiety and panic groups, with larger effect sizes observed in panic patients. Panic-related associations, however, remained unchanged following CBT in all groups. These results suggest that panic-related interpretations may function as a transdiagnostic cognitive marker—sensitive to CBT across anxiety disorders, and especially so in panic disorder.

CBM-I for Social Anxiety: Examining Clinical, Cognitive, and Neurophysiological Effects in a Randomized Controlled Trial

Speaker: **Elinor Abado**, University of Goettingen

Objective: This randomized controlled trial aimed to examine the multifaceted intervention effects of CBM-I in individuals with high levels of social anxiety.

Method: Eighty-eight participants completed three lab sessions (pre-intervention, post-intervention, and follow-up) and six online intervention sessions. Participants were randomly assigned to an active CBM-I or sham condition. In the active condition, participants completed ambiguous scenarios with positive word fragments. Across sessions, we assessed changes in interpretation bias, clinical symptoms, and subjective, neurophysiological, and behavioral stress reactivity.

Results: The primary outcome (Liebowitz Social Anxiety Scale) showed no interaction between group and time. Secondary outcomes revealed an interaction between group and time for certain social anxiety symptoms, and contrasts indicated reductions in symptom severity and interpretation bias measures only in the active group. Additionally, baseline correlations emerged between interpretation tasks and symptom measures. A scenario rating task, which measured interpretation bias to ambiguous social and neutral scenarios, showed no group or time differences but revealed that participants with high social anxiety processed socially relevant scenarios differently than neutral ones. These effects were evident in subjective ratings as well as in N400 ERP amplitudes. Additional analyses are currently in progress.

Conclusion: This RCT offers a comprehensive assessment of CBM-I effects on social anxiety. While some outcomes were sensitive to the intervention, others remained unchanged. These findings underscore the

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value of using a broad set of outcome measures to capture both near and far transfer effects of CBM-I, and suggest that interpretation bias is meaningfully linked to social anxiety symptomatology.

THINKING DIFFERENTLY: MECHANISMS AND MODERATORS OF CHANGE IN DEPRESSION-RELATED COGNITIVE BIASES

Session type: **Symposium**

Time: 14.00-15.20, Monday, 15 September

Location: V002

Session Chair: **Yannick Vander Zwalmen**, Ghent University

Cognitive biases are central to the development and maintenance of depressive symptoms, yet the extent to which these biases can be modified, and for whom such interventions work best, remains a pressing question. This symposium brings together four talks which explore both the malleability of depressive cognitive patterns and the moderators that influence training. The talks span a range of cognitive processes, including inferential style, attentional control, cognitive flexibility, and self-belief updating.

The first talk examines how Cognitive Bias Modification aimed at enhancing inferential flexibility versus promoting positivity, influences mood, rumination, and memory confabulations. Findings point toward significant improvements in inferential flexibility and a reduction in state rumination following training. The second presentation investigates Attention Bias Modification and shows that its effectiveness in reducing depressive symptoms is moderated by the BDNF Val66Met genotype, highlighting a neuroplasticity-based pathway for personalization of treatment. The third talk turns to Cognitive Control Training in remitted depression, presenting evidence on dose-response relationships and examining predictors of treatment response using machine learning models on individual characteristics. Finally, the symposium closes with a study examining biased belief updating in real-life social feedback contexts. Findings suggest that individuals with depressive symptoms struggle to integrate positive feedback into their self-concept, pointing to a core deficit in adaptive social learning.

Together, these talks underscore the importance of both targeting specific cognitive mechanisms and considering individual differences to optimize interventions for depression.

Flexibility Vs. Positivity: The Effect of Cognitive Bias Modification Training on Inferential Style, Rumination, and Mood

Speaker: **Nilly Mor**, The Hebrew University of Jerusalem

Negative inferential style, rumination, and negative memory bias are interlinked cognitive biases that are strongly associated with depression. Previous studies using Cognitive Bias Modification (CBM) procedures, tailored to promote either a positive inferential style or inferential flexibility, found a significant reduction in negative inferences and rumination compared to control. They further showed that training people to repeatedly make negative or positive inferences led them to misremember causal inferences in line with their newly formed inferential style. Expanding on our previous research, in the current study, we investigate the differential impact of CBM promoting a positive inferential style versus inferential flexibility on inferential style, mood, state rumination, and memory confabulations. Additionally, we explore the effect of brooding (a maladaptive subtype of trait rumination) as a moderator of training effects. Participants (N = 221) were assigned to one of three training conditions: inferential flexibility training, positive inferential style training, and a control condition. We assessed effects on inferential flexibility alongside mood and state rumination. Contrary to hypothesis, condition-specific effects were limited. However, results indicated significant improvements in inferential flexibility and a reduction in state rumination across conditions following the training, with effects persisting on the next day, possibly highlighting the temporal effects of CBM. Furthermore, high brooders demonstrated significant reductions in state rumination and negative mood, highlighting the potential in addressing cognitive inflexibility using CBM.

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The effect of Attention Bias Modification on depression symptoms is moderated by the BDNF Val66Met polymorphism

Speaker: **Nils Inge Landrø**, University of Oslo

Neuroplasticity is a plausible mechanism through which psychological interventions might work to relief symptoms. Brain-derived neurotrophic factor (BDNF) is a growth factor serving many critical functions in the CNS, like synapse formation and synaptic plasticity. The BDNF Val66Met variant potentiates stress sensitivity, but also conversely, enables adaptive plasticity compared to the homozygous BDNF val polymorphism. In a randomized, double blind, placebo-controlled study we investigated the possible modifying effects of the BDNF val66met polymorphism on depressive symptoms after two weeks of active Attention Bias Modification training compared to a sham condition. Two hundred and eighty eight patients with residual depressive symptoms were genotyped (val/val carriers=185, met/val or met/met carriers=103). Clinician rated depressive symptoms (based on Hamilton Depression Rating; HDRS) were measured immediately after the two weeks intervention and at one month follow-up. The results of the Mixed ANOVA revealed a significant between-subjects interaction between the ABM intervention and BDNF genotype on HDRS scores. Carriers of the met genotype in the ABM active condition improved significantly on symptoms, compared to met carriers in the placebo condition. This was not the case for carriers of the val/val genotype. In Conclusion: BDNF polymorphisms are associated with outcome of an Attention Bias Modification intervention in subjects with depression symptoms. This finding has the potential to assist in the development of personalizing treatment.

Examining the Impact of Cognitive Control Training in Remitted Depression: Dose-Response and Predictors of Treatment Outcome

Speaker: **Yannick Vander Zwahlen**, Ghent University

Cognitive control training (CCT) is a promising intervention for individuals with remitted depression (RMD), addressing residual cognitive impairments and reducing the risk of recurrence. However, key questions remain regarding the optimal dosage of CCT and the factors that predict individual responses to treatment. This symposium contribution will present two studies investigating CCT in RMD. The first study is a randomized controlled trial (N=216) which examined the dose-response relationship of CCT, varying the number of training sessions (0-20) to identify the minimum dose required for significant effects on depressive symptoms and perseverative thinking. Results indicated that at least 10 sessions were necessary for short-term symptom reductions. The second study (N=227) used machine learning to predict individual responses to CCT based on baseline characteristics and broader areas of global functioning. While the models showed modest predictive power, exploratory analyses suggested that factors like age, well-being, and life satisfaction may influence treatment outcomes.

These findings contribute to our understanding of CCT for RMD, highlighting the importance of adequate training dosage and the potential role of individual characteristics in predicting treatment response.

Biased belief updating in relation to depressive symptoms – Evidence from three studies using feedback from real social interactions

Speaker: **Tobias Kube**, Goethe University Frankfurt

Depression has been related to difficulties in using novel positive information to update negative beliefs. Research on this issue in the context of social feedback is scarce, though, as previous work mostly used scenario-based experimental tasks. This research investigated biased belief updating in relation to depressive symptoms in the context of real social interactions. Participants from non-clinical samples rated their beliefs about themselves in terms of a number of personality traits. In groups of 3-5 persons, they subsequently played a parlour game together, after which they gave each other anonymized feedback. In Studies 1 and 2 (N=117 each), this feedback was positively manipulated. In Study 3 (N=119), participants received actual feedback of their co-players, which could be positive or negative. In the end, participants rated their self-beliefs again. In Studies 1 and 2, high depressive symptom severity was associated with less belief updating following positive feedback, but in Study 1 this was found only for negative personality traits. In Study 3, the correlations of depression with updating following positive and negative feedback were not significant. However, in terms of the learning rate, participants with elevated levels of depression learned

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more from negative than from positive feedback, whereas the opposite was found for people without depressive symptoms. The results provide insights into the psychopathology of depressive symptomatology, as they point to deficits in updating self-beliefs in response to positive social feedback. At the same time, in Study 3, depressive symptoms were related to an increased sensitivity to negative social feedback.

HEALTH AND ILLNESS-RELATED COGNITIVE BIASES

Session type: **Individual Oral Presentations**

Time: 15.45-16.45, Monday, 15 September

Location: W201

Session Chair: Ali Khatibi, University of Birmingham

Cognitive Biases among Children with Cancer

Speaker: **Bushra Masalha**, The Hebrew University of Jerusalem & Hadassah Medical Center

Objective: To investigate whether children with cancer during active treatment and in remission—exhibit cognitive biases (attentional, memory, working-memory) for cancer-related stimuli.

Method: 120 children (active treatment $n=40$; remission $n=40$; healthy controls $n=40$) completed three computerized tasks: an emotional Stroop (attentional bias), a recognition test (memory bias), and an N-back task (working-memory bias). Each task used cancer-related, non-cancer negative, and neutral stimuli.

Results: Stroop RTs revealed a robust cancer-bias in the patient groups ($F(2,224)=13.29$, $p<.0001$, $\eta^2=0.106$), with no difference between active and remission ($p=.244$). A significant main effect of stimulus, $F(2, 226) = 26.52$, $p < .001$, revealed slower colour-naming for cancer images than for negative or neutral images. In recognition accuracy, both remission ($F(2,68)=4.68$, $p=.0125$) and active ($F(2,78)=4.97$, $p=.0093$) groups showed greater recall of cancer versus neutral images (post-hoc $p<.01$), whereas controls did not ($F(2,78)=0.17$, $p=.847$). On the N-back, healthy children outperformed both patient groups across conditions ($p=s<.05$).

Conclusion: Cancer and remission groups exhibit cognitive biases toward cancer-related stimuli, reflecting challenges in attentional regulation and the heightened recall of cancer-related information. Notably, these biases appear in the remission group, suggesting that their effects endure even after the illness has resolved. Moreover, Cancer-related experiences may negatively affect working memory, leading to reduced task performance in cancer and remission groups.

Specificity of computationally modeled interpretation biases in health anxiety and the contributions of repetitive negative thinking and anxiety sensitivity in a community sample of individuals with elevated health anxiety

Speaker: **Kean J. HSU**, National University of Singapore

Objective: Cognitive-behavioural models of health anxiety suggest interpretation biases for ambiguous information play a role in its maintenance and symptom expression. This study sought to clarify how specific these biases were in health anxiety and how other potential causal processes, like repetitive negative thinking (RNT) and anxiety sensitivity, are related to interpretation biases and health anxiety.

Method: Participants from the community ($N = 124$) with at least subclinical levels of health anxiety (Short Health Anxiety Inventory scores ≥ 18) completed self-report questionnaires regarding repetitive negative thinking (RNT) and anxiety sensitivity, as well as an interpretation bias task (the Word-Sentence Association Paradigm; WSAP). Using drift diffusion modeling, we calculated the drift rate for response selection on the WSAP to yield a computationally modeled expression of interpretation bias (e.g., ease of categorizing an ambiguous situation as related to health anxiety).

Results: Individuals with relatively elevated health anxiety exhibit interpretation biases (i.e., higher drift rate) specific to health-threatening scenarios but not general anxiety, dysphoric, or positive scenarios. In addition, although RNT mediates the association between health anxiety interpretation bias and health anxiety, anxiety sensitivity does not moderate the relationship between negative health-related interpretation biases and health anxiety.

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Discussion: Our work suggests health anxiety-specific interpretation biases and repetitive negative thinking may be important targets for intervention, whether through psychotherapy or computerized interventions (e.g., cognitive bias modification).

Biased Interpretation of Ambiguous Bodily Information, Health Anxiety and Fear of Recurrence in Chronic Conditions

Speaker: **Ali Khatibi**, University of Birmingham

Objective: Fear is among the leading factors influencing patients' quality of life. Among the patients suffering from a chronic condition, fear of recurrence is among the factors that have the highest impact on their quality of life. We were interested in examining the relationship between interpretation biases in the processing of bodily information and their association with fear of recurrence, with the hope that modifying these biases can enhance patients' quality of life.

Method: In a series of studies, we developed tools for assessing fear of relapse and investigated the impact of this fear on patients' quality of life. We also investigated the relationship between biased interpretation of ambiguous bodily information, health anxiety and fear of relapse. Parallely, we examined the impact of online reinterpretation training on health anxiety among healthy individuals with elevated levels of health anxiety.

Results: Fear of relapse was the best predictor of patients' quality of life. Health anxiety in patients suffering from Relapsing Remitting MS mediated the relationship between Interpretation bias for ambiguous bodily information and fear of relapse. Five Sessions of online reinterpretation training for individuals with high levels of health anxiety reduced patients' anxiety for 3 months following the end of the training.

Conclusion: Online reinterpretation training can be recognised as a potential intervention in the management of health anxiety. Managing health anxiety among patients suffering from chronic conditions may have an impact on their fear of recurrence and have a potential impact on their quality of life.

Cognitive biases and psychopathology among children with cancer

Speaker: **Bushra Masalha**, The Hebrew University of Jerusalem

Objective: This study aimed to delineate how attentional, memory, and working memory biases predict psychopathology among pediatric oncology patients, relative to healthy peers.

Method: 120 children (active treatment n=40; remission n=40; healthy controls n=40) completed three computerized tasks: emotional Stroop (attentional bias), recognition test (memory bias), N-back task (working memory). The tasks contain: cancer, non-cancer negative and neutral stimuli, to explore whether the biases are specific to the illness. In addition, the children completed Semi-structured K-SADS interviews and questionnaires assessed psychopathology symptom severity.

Results: About half of children with cancer (45 % active; 53 % remission) met DSM-5 criteria versus 16 % of controls. Attentional cancer bias correlated strongly with higher depression, anxiety, and PTSD scores among children in active treatment ($r=.48-.57$, $p<.01$) and in remission ($r=.44-.59$, $p<.01$), but not in controls ($r=.00-.04$, ns). Memory bias exhibited similar group-specific associations during treatment ($r=.42-.59$, $p<.01$) in remission ($r=.29-.46$, $p.07-.002$) and absent in healthy children. Working memory bias also predicted symptoms in both clinical groups ($r=.45-.61$, $p<.005$) but not in controls. Logistic models confirmed that greater cancer-picture RT bias was associated with 6- to 12-fold increased odds of meeting DSM-5 criteria in patient groups (all $p<.01$).

Conclusions: Cancer-related cognitive biases predict greater distress in active and remission- pediatric cancer patients. These results underscore the potential of cognitive bias-modification interventions as adjunctive therapies to enhance psychological well-being in children with cancer.

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COGNITIVE BIASES AND THE SELF – SELF-CONCEPTS, JUDGMENTS, BELIEFS, AND EXPECTATIONS

Session type: **Individual Oral Presentations**

Time: 15.45-16.45, Monday, 15 September

Location: V002

Session Chair: Colin MacLeod, The University of Western Australia

Watch yourself: How probability and cost bias influence self-focused attention in social anxiety and autistic traits.

Speaker: **Deepshikha Prasad**, Heriot-Watt University

Objective: Social anxiety is linked to heightened attention to negative social cues and negative interpretations of ambiguous social information. It is associated with high probability and cost bias – expecting negative social events to be likely and unbearable. However, the influence of these beliefs on attention bias remains unclear, particularly in relation to autistic traits. Despite comorbidity, interactions between social anxiety, autistic traits, and prior beliefs are underexplored.

Method: This study examined the role of prior beliefs in visual attention and interpretation of social cues during an evaluative social interaction. Participants' social anxiety, autistic traits, and cost and probability biases were measured before a virtual interview with six panellists displaying positive (e.g., smiling), negative (e.g., frowning), and ambiguous (e.g., scratching head) gestures. They also viewed themselves. Participants categorized gestures while eye movements were recorded. Unbeknownst to them, panellists were pre-recorded actors performing scripted gestures.

Results: Social anxiety was associated with increased cost bias but not probability bias. High social anxiety and cost bias predicted more negative interpretations of ambiguous cues, but not of negative cues. High autistic traits, probability, and cost bias also predicted more negative interpretations of ambiguous cues. High social anxiety predicted greater self-focused attention but only when probability and cost bias were high. Autistic traits were linked to greater self-focused attention. Neither social anxiety nor autistic traits predicted attention bias. No evidence of hypervigilance was found.

Conclusions: Findings show how negative beliefs shape behaviour in social interactions, informing cognitive models of social anxiety and autistic traits.

Updating Self-Beliefs in Social Anxiety and Depression

Speaker: **Eva Gilboa-Schechtman**, Bar Ilan University

Objective: Cognitive models propose that biased information processing in social anxiety (SA) and depression facilitates negative and inhibits the processing of positive self-information. These biases are postulated to reinforce persistent negative views of the self. Recent studies demonstrate biased updating of self-beliefs in response to valenced new information in both SA and depression, yet the results are not fully consistent with theoretical postulations. Importantly, self-information is structured around two primary domains: agency and communion. These domains distinctly influence the way information about the self is processed and integrated. However, this distinction is missing from the examination of self-belief updating. The current studies examined how individuals update agentic and communal self-beliefs in response to negative and positive social feedback. **Method:** We employed a novel 'SocialMirror' paradigm in a large subclinical sample (n = 560). In this task, participants received negative feedback followed by positive feedback on their personality traits. **Results:** SA was uniquely associated with increased negative updating of agentic, but not communal, self-beliefs. Depression was uniquely associated with reduced positive updating across both domains. Notably, these findings remained evident even after statistically controlling for initial beliefs. Across the sample, updating was domain dependent, with agentic traits being less malleable. **Conclusion:** These findings suggest domain- and valence-related patterns of self-belief updating in SA and depression. Results are interpreted in light of Bayesian models, emphasizing the need to integrate motivational aspects into cognitive theory. We highlight the implications of these findings for interventions aimed at updating self-belief in psychopathology.

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Selves of Future Past: Negativity Bias and Self-Compartmentalization After Trauma

Speaker: **Nimrod Hertz-Palmor**, University of Cambridge

Objective: PTSD is associated with disrupted self-perception, including increased negativity and compartmentalization of self-concept. This study examines whether trauma-exposed individuals experience greater negativity and compartmentalization in their self-perception when reflecting on their present selves compared to their pre-trauma selves, to clarify the impact of trauma on self-organization and negativity bias.

Method: Sixty-seven trauma-exposed participants, representing a range of symptom severity, completed a self-descriptive card-sorting task on two occasions: once after recalling and writing about a specific pre-trauma autobiographical event (unrelated to the trauma), and once after reactivating a present-day memory. In each session, participants generated self-aspects relevant to their lives (e.g., “self at work,” “self with friends”). They then sorted 48 cards, each displaying a positive or negative trait, into their self-aspects. Negativity (proportion of negative cards) and compartmentalization (segregation of positive and negative traits into distinct self-aspects) were quantified for each condition.

Results: Participants generated 721 self-aspects in total and reported significantly more negative and compartmentalized self-views when reflecting on their post-trauma selves compared to their past selves, as shown by a higher proportion of negative attributes and greater segregation of positive and negative traits in the present-day condition.

Conclusion: These findings suggest that trauma fundamentally alters self-concept, leading to increased negativity and compartmentalization, particularly when individuals access memories of their post-trauma selves. Such disruptions in self-organization and negativity bias may perpetuate PTSD symptoms and hinder recovery, highlighting the importance of targeting these processes in trauma interventions.

Witnessing Trauma: Effects on Interpretation and Judgement Biases and Their Link to PTSD symptomatology

Speaker: **Judith Schäfer**, Technische Universität Dresden

Objective: Theories explaining the development and persistence of posttraumatic stress disorder (PTSD) strengthening the role of interpretation and judgement biases. Research has shown that these biases are associated with PTSD symptomatology. However, it remains unclear whether traumatic experiences change interpretation and judgement biases and whether such changes are associated with the development of PTSD symptomatology.

Method: N=130 healthy participants were randomly assigned to two groups: The experimental group (EG, n=65) was exposed to a movie with violent scenes serving as a trauma analogue, whereas the control group (CG, n=65) watched a neutral scene. Interpretation biases were assessed with the Ambiguous Scenarios Test supplemented by questions regarding valence, confidence in outcome, perceived escalation of threat, predictability and controllability. Judgement biases were assessed using the Probability and Cost Questionnaire. Biases were rated before and after the movie and one week later. Participants protocolled intrusive memories during the week after the movie.

Results: The study has been completed recently, but data preparation is still ongoing. Findings of ANOVA with repeated measures testing changes of interpretation and judgment biases in the groups from pre- to post-movie will be reported. Regression analyses will test whether changes in these biases predict number of intrusive memories.

Conclusion: Theoretical, empirical and practical implications will be discussed.

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Day 3; Tuesday, 16 September

COGNITIVE BIASES IN CONTEXT: UNCOVERING THEIR NATURE, PATHWAYS, AND CLINICAL IMPACT

Session type: **Early Career Keynote Lecture**

Time: 09.15-10.15, Tuesday, 16 September

Location: W201

Speaker: **Jonas Everaert**, Tilburg University

Abstract: Mental health conditions often feature biases and inflexibility in higher-order cognition, especially when interpreting ambiguous social cues. This talk addresses three open issues: (a) to what extent these difficulties are transdiagnostic; (b) how do they unfold in daily life and when naturalistic social contexts amplify or attenuate them; and (c) the socio-affective mechanisms through which they contribute to symptomatology. This talk will conclude with implications for assessment and intervention as well as priorities for future research.

PERSONALIZED COGNITIVE FRAMEWORK FOR DIAGNOSIS AND INTERVENTION IN ANXIETY AND DEPRESSION

Session type: **Early Career Keynote Lecture**

Time: 09.15-10.15, Tuesday, 16 September

Location: W201

Speaker: **Thalia Richter**, Max Planck Institute for Human Cognitive and Brain Sciences

Current diagnostic methods for psychiatric disorders rely on self-reported symptoms and categorical classifications, despite considerable symptom overlap and heterogeneity. These limitations contribute to moderate treatment success rates, highlighting the need for more personalized diagnostic and intervention methods. We investigate a novel mechanism-based framework for diagnosis, based on alterations in underlying cognitive mechanisms across anxiety and depression disorders. In a series of studies, subclinical and clinical participants with anxiety and depression completed a cognitive test battery composed of six computerized tasks targeting selective and spatial attention, expectancy, interpretation, memory, and cognitive control biases. Machine learning models analyzed cognitive bias patterns, achieving high accuracy in predicting symptom severity and diagnosis, while comparing disorder-specific and transdiagnostic approaches. We also explore how individual characteristics shape the effectiveness of cognitive training interventions designed to enhance cognitive functioning and alleviate symptoms. In addition, we address how social experiences influence cognitive biases and examine whether cognitive interventions can alter social behavior. By bringing these perspectives together, the framework provides a basis for developing more personalized, mechanism-informed, and context-sensitive approaches to psychiatric diagnosis and treatment.

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COGNITIVE BIASES AND BELIEF SYSTEMS IN ANXIETY-RELATED PSYCHOPATHOLOGY: FROM ASSESSMENT TO INTERVENTION

Session type: **Symposium**

Time: 10.30-11.50, Tuesday, 16 September

Location: W201

Session Chair: **Marius Kunna**, Ruhr University Bochum

Cognitive biases, particularly negative interpretations and attentional biases towards threat-related stimuli, play a pivotal role in the etiology and maintenance of anxiety disorders. This transdiagnostic symposium brings together innovative empirical studies on assessing and modifying cognitive biases across various anxiety-related domains and investigates how individual change trajectories can serve as predictors of treatment outcome.

The first talk evaluates the psychometric properties of three promising tasks for capturing disgust-related interpretation biases in contamination-based OCD (C-OCD), aiming to identify the most robust tool for future research and clinical application. The second presentation addresses the attentional mechanisms underlying contagious beliefs in C-OCD. Results support a relationship between contagious beliefs and biased attentional processes towards potentially contaminated objects, offering a valuable foundation for developing targeted Cognitive Bias Modification interventions. The third talk shifts focus to metacognitive therapy, showing that individual responses to a critical therapy session can predict treatment outcomes, highlighting the potential of dynamic predictors for personalized treatment. Finally, the fourth presentation investigates the augmentation of Cognitive Bias Modification–Interpretation through cortisol administration, testing whether enhancing memory consolidation boosts intervention effects on cognitive and physiological stress responses.

Together, these studies offer new insights into disorder-specific and transdiagnostic mechanisms of cognitive biases and belief systems and their potential as therapeutic targets. This symposium highlights both the theoretical significance of cognitive biases across the anxiety spectrum and practical approaches for enhancing their modification to improve clinical outcomes.

Psychometric Validation of Disgust-Related Interpretation Bias Measures in Contamination-Related OCD

Speaker: **Hanna S. Bethcke**, University of Potsdam

Objective: Disgust-related interpretation biases play an important etiological and maintaining role in C-OCD. However, there are no time-stable fully validated measures for interpretation biases in C-OCD. Therefore, the present study aims to evaluate and compare the psychometric properties of three different tasks assessing interpretation biases in the context of C-OCD: the Encoding Recognition Task (ERT), the Ambiguous Scenario Task (AST), and the Scrambled Sentence Task (SST).

Method: A total of 120 participants will be recruited for this online-study and stratified into equal groups with low, medium, and high levels of C-OC symptoms. Participants will view a validated disgust-inducing film and subsequently complete the ERT, AST, and a newly adapted disgust-related SST (in counterbalanced order). All tasks will be administered again after two weeks to examine retest reliability. Additional self-report measures will include disgust sensitivity, C-OC symptoms, depressive symptoms, and trait anxiety.

Results: We will evaluate internal consistency and test–retest reliability for each task. Convergent validity will be examined via inter-task correlations, and associations with disgust sensitivity as a primary and C-OC symptoms as a secondary outcome. Discriminant validity will be evaluated through examining the tasks' correlations with depressive symptoms and trait anxiety. Multiple regression analyses will examine the unique predictive value of each task for disgust sensitivity and C-OC symptom levels.

Conclusion: The validation findings will be discussed in terms of their critical implications for identifying the most psychometrically sound tool to advance investigations into disgust-related interpretation bias.

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Attentional Biases in Participants with High Contagious Beliefs

Speaker: **Lars Rothkegel**, University of Potsdam

Objective: Contagious beliefs (CB) are a cognitive bias elevated in individuals with contamination-based OCD (or C-OCD). People with high CB tend to believe that all infectious properties are transferred from one object to another through touch (the so called “Law of Contagion”). High CB might contribute to C-OCD not profiting sufficiently from exposure therapy. Cognitive bias modification might be a useful addition to therapy. However, attentional bias for individuals with CB have not yet been investigated. We thus investigated whether individuals with high CB are subject to an attention bias towards different objects.

Method: 50 healthy participants with different degrees of CB searched four different objects in natural scenes: neutral (an alarm clock), disgusting (a used handkerchief), cleanliness (disinfectant) and a supposedly contaminated object (a pen, which was brought into contact with a disgusting object in a previous video). After this, participants performed a saccadic reaction task towards these objects and then CB were assessed.

Results: Participants with high CB were significantly faster in detecting the supposedly contaminated object. They were faster in detecting the cleanliness object but not significantly. There was no difference in search time for the neutral or inherently disgusting object.

Conclusion: Contagious beliefs seem to be connected to an attentional bias towards potentially contaminated objects. Breaking this attentional bias with attentional bias modification could potentially help to reduce contagious beliefs.

Understanding Treatment Improvement in Patients with Comorbid Anxiety Disorders: Dynamic Changes in Beliefs about Worry in Response to a Critical Session

Speaker: **Vera Bouwman**, Utrecht University

Objective: Negative beliefs about worry are a transdiagnostic maintaining factor of anxiety, addressed in an early critical treatment session of Metacognitive Therapy. This study examined the individual temporal response to this critical session to predict overall treatment outcome. Based on Dynamic Systems Theory, it was expected that patients who retained an improvement in negative beliefs after the critical session, benefitted more from the overall treatment.

Method: Treatment-resistant patients with comorbid anxiety disorders who followed Metacognitive Therapy and showed a drop in negative beliefs about worry after the critical session were selected (N = 45, 73.3% women, M age = 44.5). Negative beliefs about worry up to two weeks after the critical session, measured with the Metacognitions Questionnaire-30, were used to determine response patterns. Anxiety symptoms were measured at start, end, and one year after treatment using the Beck Anxiety Inventory. Analyses were pre-registered.

Results: Most patients (65.1%) were classified as persistent responder (retaining improvement after critical session), as opposed to reversed responders, but this dichotomous predictor did not predict treatment outcomes. In contrast, individual slopes of negative beliefs about worry after the critical session positively predicted anxiety symptoms and clinically relevant improvement posttreatment but not one year follow-up.

Conclusion: Holding on longer to an improvement in negative beliefs about worry predicted better treatment outcomes. This dynamic predictor could provide insight into whether patients have mastered a theorized, critical element for symptom improvement in MCT, which could be used to implement adjustments to the treatment plan to improve individual treatment effectiveness.

Cortisol as a Booster of Cognitive Bias Modification Interpretation: Effects on Social Anxiety-Related Interpretations and Markers of Stress Reactivity

Speaker: **Marius Kunna**, Ruhr University Bochum

Objective: Interpretation biases (IBs) – the tendency to consistently process disorder-relevant, ambiguous stimuli in a biased, mostly negative manner – play a causal role in cognitive models of anxiety disorders. Cognitive Bias Modification–Interpretation (CBM-I) yield promising effects in changing IBs. However, effects on self-reported and psychophysiological stress reactivity markers (SRM) are inconsistent. Therefore, enhancing the efficacy of CBM-I may be crucial for strengthening transfer effects. Given the important role of

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stress hormones in learning processes, the glucocorticoid cortisol, known to facilitate memory consolidation and learning, emerges as a promising candidate for augmenting the impact of CBM-I.

Method: In this double-blind experimental study, individuals with elevated levels of social anxiety (targeted sample N=94, present sample N = 26) are randomly assigned to receive either cortisol or placebo prior to single-session, positive scenario-based CBM-I. IBs are assessed before and after training and the next day. SRM are measured across the study via self-report and psychophysiological indices including heart rate (variability) and salivary cortisol. A memory test assesses explicit recall of training content.

Results: Data collection is ongoing and will be completed in August 2025. The talk will cover results across all outcome variables, including changes in IBs and SRM.

Conclusion: This talk will discuss the implications of cortisol's potential role in augmenting CBM-I and enhancing transfer effects on symptoms of anxiety. These insights may help to better understand the influence of cortisol on associative learning processes in the context of CBM-I, potentially paving the way for stimulating innovative follow-up research.

COGNITIVE AND EMOTIONAL MODULATORS OF BIASED ESTIMATION: EVIDENCE FROM HEALTHY AND CLINICAL POPULATIONS USING MULTIMODAL METHODS

Session type: **Symposium**

Time: 10.30-11.50, Tuesday, 16 September

Location: V002

Session Chair: **Hadas Okon-Singer**, University of Haifa and Max Planck Institute for Human Cognitive and Brain Sciences

A growing body of evidence suggests that the estimation of physical distance, height, and size is shaped not only by sensory input but also by beliefs, psychopathology, and environmental factors. This interdisciplinary symposium brings together recent findings and innovative methods from cognitive, neuro, and clinical psychology to explore the mechanisms behind these biased estimations.

Talks will feature behavioral, physiological, and neuroimaging approaches in both healthy individuals and clinical populations, including those with social anxiety and eating disorders. Cutting-edge methodologies—such as virtual reality, real-world tasks, and multisensory paradigms—will enhance ecological validity and deepen our understanding of the underlying processes.

Prof. Sören Krach (University of Lübeck, Germany) will outline a neurocognitive framework that demonstrates how motivational biases and affective experiences shape beliefs that influence perceptions of height. Prof. Yann Coello (University of Lille, France) will present multimodal experiments revealing how representations of body space, social space, and emotional context modulate interpersonal distance preferences. Dr. Wolf-Gero Lange (Radboud University, the Netherlands) will introduce a novel VR task examining how individuals with social anxiety respond to approaching figures. Manisha Biswas (Humboldt University, Germany) will present an ecological VR adaptation of the stop distance task, focusing on interpersonal space regulation. Finally, Prof. Hadas Okon-Singer (University of Haifa, Israel; MPI-CBS, Germany) will integrate these findings within current models of biased cognition and cognitive training.

Together, these contributions offer a comprehensive and up-to-date perspective on distorted spatial estimation across populations, along with innovative methodological insights for future research.

Affected beliefs: Mechanisms underlying the formation and revision of self-beliefs

Speaker: **Sören Krach**, University of Lübeck

Self-beliefs, such as beliefs about our abilities, attractiveness, or personality, are under constant (re)evaluation depending on the feedback we receive from our surrounding world. However, self-related feedback processing is not a passive process in which information is incorporated in an objective manner. Rather, self-belief formation is essentially biased by affective and motivational processes. In several studies, using the Learning-of-own-performance (LOOP) task, I approach the question of how humans arrive at their self-beliefs (study 1) and, once established, how these self-beliefs are revised in the face of conflicting evidence (study 2). Using computational modeling and functional neuroimaging, I will show that the formation of self-beliefs is biased towards negative information and this bias is associated with the

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experience of affective states during belief formation. In a clinical sample of persons diagnosed with major depression and healthy controls, we replicate the negativity bias by showing that both groups have similar patterns of negatively biased belief formation. Further, in the insula, negatively biased updating was accompanied by stronger tracking of negative, but not positive, prediction errors with increasing symptom severity (study 3). The findings provide support from healthy and clinical samples for the overall rationale of the formation of affected beliefs, that is, the notion that beliefs depend on global priors and are fundamentally shaped by motivational biases as well as affective experiences during feedback processing.

Bias in the control of social distance according to emotional context

Speaker: **Yann Coello**, University of Lille

We aim to present a series of studies exploring how interpersonal distance is regulated based on body space representation and emotional context. These studies involve both healthy individuals and populations characterized by distorted body representation and heightened social anxiety, such as patients with anorexia nervosa. We specifically focused on preferred interpersonal distance, physiological responses and multisensory (visuo-auditory-tactile) integration.

The conducted studies used dynamic virtual human characters presented in an immersive virtual environment, and characterized by varying facial expressions (joy, anger, neutral) and different body sizes (underweight, overweight, standard). The participants' task was to determine their comfortable interaction distance as these virtual human characters approached them at a constant speed. Preferred social distances were recorded, along with participants' emotional reactions measured through their electrodermal (skin conductance) physiological responses. We also measured the facilitation of tactile processing induced by a vibrator on the participant's chest, which was triggered by the virtual human characters depending on their distance.

Overall, the data highlighted that preferred interpersonal distance was driven by the representation of body space and physiological reactions to emotional context, which in turn modulated multisensory integration. Furthermore, alterations in the social cues used to regulate social space were observed in pathological populations. Based on these findings, we will propose a model that accounts for the relationships between bodily space and social space as a function of emotional context.

Correlates of social anxiety in a virtual reality task: backward leaning, interpersonal distance, gaze aversion, and facial expression of approaching agents

Speaker: **Wolf-Gero Lange**, Radboud University

Objective: Cognitive models of Social Anxiety Disorder (SAD) suggest that heightened social anxiety leads to negative interpretation of social cues, such as facial expressions. Individuals with SAD do receive unfavourable evaluations, potentially due to avoidant behaviors—like leaning back—when their personal space is intruded upon. However, this link remains unclear, and avoidant gaze behavior may play a moderating role.

Method: This study examines how social anxiety relates to backward leaning in response to approaching individuals, the interpersonal distance at which this occurs, and how averted eye-gaze and facial expressions (angry, neutral, smiling) influence this response. Using a virtual reality (VR) setup, participants with varying levels of social anxiety are approached by virtual agents of different genders and facial expressions. While participants passively await the agents, body sway and gaze toward the agent's face are continuously tracked.

Expected Results: Previous VR research has shown that socially anxious individuals avoid eye contact and alter posture in response to personal space intrusions. Yet, previous studies often used fixed distances, neutral agents, and tested only female participants. Our study overcomes these limitations by using dynamic interpersonal distances, diverse agent expressions, and mixed-gender participants. Data analysis is still ongoing and results will be presented.

Conclusion: We expect that higher social anxiety will be associated with greater backward leaning at larger distances, especially in response to angry or smiling agents, and that gaze aversion may reduce this leaning. Understanding how posture and gaze interact could clarify mechanisms behind social devaluation and offer new intervention targets.

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An immersive virtual reality stop distance task for investigating proxemics and physiological responses

Speaker: **Manisha Biswas**, Humboldt University

Objective: This project aimed to develop an immersive virtual reality (VR) version of the stop distance task to study how individuals regulate interpersonal space within realistic yet controlled settings.

Method: We created a VR environment on Unity where participants perform the stop distance task by approaching or being approached by a virtual character or a group of virtual characters. Physiological data, including electrocardiogram (ECG) and heart rate, are collected in real time through integration with the VR system. This enables synchronised recording of behavioural responses and physiological signals during social interactions in the virtual space.

Results: The immersive quality of VR makes the experience feel lifelike, eliciting authentic emotional and physiological reactions. This setup allows for fine-grained analysis of proxemic behaviour alongside autonomic nervous system activity. The task can be applied to examine a range of research questions, such as how minimal group membership influences proxemic regulation, or how traits like loneliness affect interpersonal distancing.

Conclusion: VR offers a versatile platform for psychological research by combining experimental control with ecological validity. The more we are able to integrate real-time physiological measures and create immersive experimental scenarios, the more closely we can study naturalistic human behaviour. This approach opens up new avenues for understanding the complex dynamics of social space regulation.

ASSESSMENT OF DEPRESSION-RELATED COGNITIVE BIASES

Session type: **Individual Oral Presentations**

Time: 12.00-13.00, Tuesday, 16 September

Location: W201

Session Chair: Amit Lazarov, Tel Aviv University

Clarifying the relation between anhedonia symptom severity, reward learning, and anhedonia attentional bias

Speaker: **Kean J. HSU**, National University of Singapore

Objective: Anhedonia, a hallmark symptom of depression, can be conceptualised as symptomatic and behavioural impairments in liking, wanting and learning of rewards and pleasurable experiences. From a cognitive perspective, researchers have also proposed that anhedonia, similar to depression, is associated with a reduced tendency to sustain attention on positive information (i.e., an anhedonic bias; AB). This study examined the relationship between the three conceptualisations of anhedonia – symptomatic, behavioural and cognitive.

Methods: Eligible participants (n = 91) completed self-report scales assessing anhedonia severity and a Probabilistic Reward Task assessing impairments in reward learning. During a free viewing task, an eye tracker recorded participants' frequency and duration of frequency on happy faces.

Results: The results do not support our hypothesis that individual differences in anhedonia symptom severity correlate with those in reward learning. Furthermore, both elevated symptom severity and impaired reward learning did not correlate with a reduced positive AB.

Discussion: We do not have sufficient evidence to confidently conclude that these potential symptomatic, behavioral, and cognitive expressions of anhedonia are associated. Nevertheless, future research could continue to develop and investigate explicit conceptualisations of anhedonia from cognitive perspectives, allowing for the development of more accurate diagnostic tools and effective treatments.

Memory Biases and Postpartum Depression Severity: A Cross-Sectional Study

Speaker: **Iliana Liakea**, Radboud University

Postpartum depression (PPD) is a prevalent and impairing condition that affects not only the mother but also the infant and family dynamics. Robust evidence links negative memory bias and overgeneral autobiographical memory to major depressive disorder, yet their role in PPD remains underexplored. This study investigated whether these memory biases are associated with the severity of PPD symptoms. A cross-

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sectional observational study was conducted with 93 postpartum mothers (M age = 29.06, SD = 6.41) recruited online. Eligible participants had given birth within the past 12 months and scored ≥ 7 on the Edinburgh Postnatal Depression Scale (EPDS; M=15.81, SD= 4.95), indicating at least mild depressive symptoms. Participants completed the Self-Referent Encoding Task (SRET) to assess negative memory bias and the Autobiographical Memory Test (AMT) to measure memory specificity. Linear regression models were used to test whether each bias predicted PPD severity. Preliminary results showed that negative memory bias significantly predicted PPD severity ($\beta = 6.79$, $p < .001$), $F(1, 86) = 14.84$, $p < .001$, explaining 14% of the variance. In contrast, memory specificity was not a significant predictor ($p > .05$). These findings highlight negative memory bias as a meaningful cognitive marker of PPD symptom severity, whereas reduced memory specificity may not play a substantial role. Implications for cognitive models of PPD and the potential for targeted interventions will be discussed in light of study limitations.

The Role of Selective Interrogation of Information about Parenthood in Prenatal Repetitive Negative Thinking: Study of First-time Expecting Mothers and Fathers

Speaker: **Mahdi Mazidi**, The University of Western Australia

Objective: Repetitive Negative Thinking (RNT) during pregnancy is a key risk factor that consistently predicts later psychopathology both during pregnancy and postpartum. However, cognitive mechanisms underlying prenatal RNT remain poorly understood. Recent research suggests that a tendency to volitionally seek negative over positive information about parenthood may contribute to elevated prenatal RNT. This study first replicated our previous work with first-time expecting mothers, while increasing the ecological validity of the task. We also extended previous work by testing two competing hypotheses: that a bias for negative information specifically about parenthood predicts elevated parenthood-specific RNT, versus that a general negative interrogation bias predicts both parenthood-specific and general RNT. This presentation will also share results from an ongoing study examining, for the first time, this bias in first-time expecting fathers.

Method: We recruited 120 first-time pregnant women and assessed both their general and parenthood-specific prenatal RNT. Selective interrogation of information was measured using a novel paradigm: the Selective Interrogation of Information Task, which presented participants with parenthood-relevant and -irrelevant positive and negative information to choose from.

Results: Significant associations were found between negatively biased interrogation of both parenthood-relevant and -irrelevant information with both forms of RNT. Further analysis showed that shared variance between these biases predicted RNT. Thus, the findings replicate prior results and support the second hypothesis: that a general negative interrogation bias predicts elevated RNT about parenthood and more broadly.

Conclusion: Findings are discussed in terms of their implications for cognitive bias modification interventions aimed at reducing elevated prenatal RNT.

LESS COMMON COGNITIVE BIASES

Session type: **Individual Oral Presentations**

Time: 12.00-13.00, Tuesday, 16 September

Location: V002

Session Chair: Julie Ji, University of Plymouth

Unpacking affect maintenance and its association with depressive symptoms: Integrating positive and negative affects

Speaker: **Shimrit Daches**, Bar Ilan University

Objective: Depression is associated with prolonged maintenance of negative affect (NA) and the blunted and short-lived experience of positive affect (PA). While previous research has primarily focused on factors contributing to the maintenance of NA, such as brooding and the ability to sustain negative affective content in working memory (WM), less attention has been given to processes that underlie the experience of PA. The current study aimed to identify cognitive and regulatory factors associated with both NA and PA maintenance and their relationship to depressive symptoms.

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Method: A sample of 219 participants completed an online experiment involving the Affective Maintenance Task (AMT; Mikels et al., 2008) and self-report measures of brooding, positive rumination, and depressive symptoms.

Results: Brooding, positive rumination, and AMT-based measures of positive, but not negative, affective information maintenance were independently associated with depressive symptoms.

Conclusion: These findings highlight the distinct role of PA processing and emotion regulation strategies in understanding affective disturbance in depression.

Biases in Selective Information Seeking: Insights from the Selective Interrogation Task

Speaker: **Amelia Reynolds**, The University of Western Australia

Objective: Over the last two decades, advancements in Internet-based technologies have transformed our lives. This transformation has not gone unnoticed, but research examining its impacts on mental wellbeing has highlighted the need for measures that capture how people use these technologies, rather than the extent of usage. To address this, we developed the Selective Interrogation Task to assess biases in selective information seeking, i.e., individual differences in the types of information people choose to access.

Method: The Selective Interrogation Task presents participants with a pool of information containing multiple content types. Participants selectively access a subset of the available information, and the proportion of one type selected is taken as a measure of their selective interrogation bias.

Results: Across several studies, the task has demonstrated excellent internal consistency (mean Cronbach's $\alpha = .86$) and sensitivity to individual differences. For example, people who selectively interrogate negative (vs. positive) information about potential stressors or life transitions tend to report more negative expectations and negative emotional experiences. In contrast, people who favour hedonic (vs. health-related) information tend to engage more in unhealthy behaviours and report less motivation to change. Ongoing studies are extending this work to alcohol use, vaping, and climate anxiety.

Conclusion: Findings highlight the value of assessing individual differences in the types of information people choose to access online. The Selective Interrogation Task offers a readily adaptable method for capturing these information seeking patterns. Limitations and potential extensions of this research will be discussed.

Body dysmorphic concerns and associations between unattractiveness and negativity in young men and women.

Speaker: **Josh Gordon**, The University of Western Australia

Objective: People tend to believe they possess, at least some, unattractive physical characteristics, however they differ in the degree to which this belief results in distress. Individuals with elevated body dysmorphic concerns notably experience significant distress resulting from believing they possess unattractive physical characteristics. It is suggested that a greater tendency to associate unattractive physical characteristics with negative social characteristics may explain the disproportionate negative effect of said beliefs. However, a limitation of previous research is a tendency to focus on female samples, and thus develop methodologies investigating characteristics that may only be relevant to females. The present study tests the hypothesis that individuals, both male and female, with greater dysmorphic concerns will show a greater tendency to associate unattractive physical characteristics with negative social characteristics.

Method: Undergraduate participants varying in reported body dysmorphic concerns completed two distinct tasks (the Implicit Association Test and the Relational Responding Task) measuring their tendency to associate unattractive physical characteristics and negative social characteristics. Sets of physical and social characteristics were developed to represent characteristics considered unattractive/negative by society for a person of the participant's gender.

Results: If the hypothesis is supported, participants reporting greater body dysmorphic concerns will show a greater tendency to associate unattractive physical characteristics and negative social characteristics.

Conclusion: Findings will be discussed with regard to limitations and potential implications for understanding the role of associations in the disproportionate negative effect of perceived unattractive physical characteristics on individuals, both male and female, with elevated body dysmorphic concerns.

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Of wire and bubble wrap: Mental Imagery-based Threat Interpretation Impairs Descending Pain Inhibition

Speaker: Julie Ji, University of Plymouth

Objective: Mental imagery-based simulations of threat can evoke “as-if-real” emotional and motivational responses, which may alter pain perception and processing. This study investigated the impact of mental imagery simulations of threat on descending pain modulation in n = 71 healthy participants.

Method: Participants underwent two blocks of Conditioned Pain Modulation (CPM) assessment using cuff-pressure algometry. In block one, participants were assessed on their baseline pain detection threshold (PDT), pressure pain tolerance (PTT), and descending pain modulation (CPM). In the second block, participants underwent the same procedures again but were randomly allocated to imagine the dominant leg cuff as being made of bubble wrap (low threat condition; n = 35) or metal wire (high threat condition; n = 36). In between blocks, participants went to a separate room to interact with a piece of real bubble wrap or metal wire around their legs, facilitating mental imagery generation in Block 2.

Results: Partially consistent with hypothesis, mental imagery impacted CPM effects for pain detection threshold (PDT), but not pressure pain tolerance (PPT), being significantly reduced in the Wire relative to the Bubble-wrap condition. Results indicate that mental simulation of threat impaired descending pain modulation of pain.

Conclusion: Our data suggest that mental simulation of threat may contribute to elevated pain perception and may be relevant to the maintenance of pain conditions.

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CBM IN ALCOHOL DEPENDENCE: ANSWERING VARIOUS UNANSWERED QUESTIONS IN THE QUEST TO IMPROVE THE CURRENT STATE

Session type: **Symposium**

Time: 14.00-15.20, Tuesday, 16 September

Location: W201

Session Chair: **Edwin Schenkel**, Georg-August-University of Göttingen

Automatic processes play vital roles in the development and maintenance of alcohol use disorder (AUD). Modifying these processes, particularly approach-avoidance tendencies, as part of clinical treatment has proven effective in reducing consumption and relapse rates after treatment. Whilst these advances are significant, many unanswered questions of multi-faceted origin exist. This symposium responds to that need by integrating a variety of presentations aiming to generate novel insights into automatic processes in AUD and improvements in their modification. First, corresponding to the well-known high comorbidity of AUD and smoking, Charlotte Wesser will present a study examining the relationship between approach biases towards alcohol and smoking stimuli. This might stimulate the development of an integrated CBM intervention for this target group. Further, turning to individuals with AUD who are not actively seeking treatment, Victoria Manning reports on smartphone-assessed attentional bias and approach bias in this highly prevalent but typically neglected target group. Furthermore, despite proving clinically effective in reducing relapse rates after treatment, the reliability of the joystick-based Approach-Avoidance-Task is modest at best. Therefore, Adrian Nichici presents a study that assesses the reliability of a novel version of the irrelevant-feature AAT, designed to increase the conflict between automatic action tendencies and rule-based responses. Finally, although CBM studies in AUD have provided evidence for its clinical effectiveness, meta-analytic confirmation of these results is needed. Correspondingly, Ting Pan will present an update of a meta-analysis focusing on the individual patient level of CBM studies in AUD using Bayesian analyses.

Shared Bias? Linking Alcohol and Tobacco Approach Biases in a Clinical Sample of Alcohol-Dependent Smokers

Speaker: **Charlotte Wesser**, Medical School Brandenburg

Objective. This study aims to investigate whether alcohol and tobacco approach biases are interrelated in alcohol-dependent smokers, potentially indicating shared cognitive-motivational processes underlying dual substance use.

Method. Approach biases concerning alcohol and tobacco were assessed using joystick-based Approach-Avoidance Tasks (AAT). All participants met criteria for alcohol and tobacco dependence. Bias scores for each substance were computed and analyzed to examine the strength and direction of their association. The severity of dependence was measured using the Alcohol Use Disorders Identification Test (AUDIT) and the Fagerström Test for Nicotine Dependence (FTND), which were also considered as potential moderating factors.

Results. Analyses are currently underway. Preliminary exploration is focused on determining whether a higher bias toward one substance is associated with a stronger bias toward the other, suggesting possible cognitive overlap.

Conclusion. Demonstrating a relationship between alcohol and tobacco approach biases could support the hypothesis of shared automatic processes in dual substance use. These findings may inform the development of integrated cognitive bias modification (CBM) interventions that target multiple substances simultaneously, potentially improving treatment outcomes for individuals with co-occurring substance use patterns.

Attentional Bias and its Clinical Correlates in a Large Community Sample with Alcohol Use Disorder.

Speaker: **Victoria Manning**, Monash University

Objective: Attentional Bias (AB) to alcohol cues is thought to contribute to onset and maintenance of alcohol use disorder (AUD). This study aimed to assess the presence of AB and its correlates among a large sample of non-treatment-seekers with AUD.

Method: Data from the baseline assessment of a large double-blind RCT exploring the efficacy of an approach bias modification app was used to explore alcohol AB (measured using the Alcohol-Stroop task)

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and its relation to alcohol problem severity (AUDIT and severity-of-dependence-scale), craving (Craving-Experiences-Questionnaire), alcohol use motives (Drinking-Motives-Questionnaire), and anhedonia (Snaith-Hamilton-Pleasure-Scale).

Results: The sample comprised 1,456 (50.1% female) participants aged 18-77 ($M=46.79$) who scored >16 on the AUDIT. The sample demonstrated a slower reaction time towards alcohol-related compared with neutral words on the Alcohol-Stroop (Mean difference = 34.97 milliseconds). Participants scoring >20 on the AUDIT (likely dependent) had a significantly greater AB compared to participants with AUDIT scores <20 , $p=.023$. Bivariate correlations found small but significant, positive associations between alcohol AB and: AUDIT score ($r=.082$, $p<.01$), dependence severity ($r=.091$, $p<.001$), craving ($r=.067$, $p<.05$), and anhedonia ($r=.061$, $p<.05$). However, no significant association was found between AB and drinking motives ($p>.05$).

Conclusion: This study identified that non-treatment-seekers with AUD show a weak AB towards alcohol-related words, which are significantly associated with alcohol problem severity and craving. AB was stronger in more severely-dependent participants, highlighting the potential role of AB modification as an intervention for non-treatment-seekers with AUD.

Rethinking the Approach-Avoidance Task: Can Increased Process Interference Enhance Reliability?

Speaker: **Adrian Nichici**, University of Amsterdam

Objective. Automatic action tendencies play an important role in alcohol use disorders. However, research in this field is limited by the low reliability of the approach-avoidance task (AAT), one of the main paradigms for measuring automatic action tendencies. The current study aims to assess the reliability of a novel version of the irrelevant-feature AAT, designed to increase the conflict between automatic action tendencies and rule-based responses.

Method. 20 participants will complete 400 trials of our novel AAT version, in which participants push or pull a joystick in response to the tilt of stimuli showing alcoholic and non-alcoholic beverages. Three changes were made to standard versions of the irrelevant-feature AAT. First, salient video stimuli are presented instead of still pictures. Second, the locations of the stimuli are randomly jittered to prevent participants from focusing on stimulus orientations in preparation. Third, participants need to report the stimulus category (alcohol vs non-alcohol) on one-fifth of the trials to ensure adequate stimulus processing.

Results. Hierarchical Bayesian analysis methods will be used to obtain preliminary results. Reliability will be measured as the ratio of trait variability to the sum of state and measurement error variability. Further, we will estimate the number of trials for reaching an adequate reliability of 0.8.

Conclusion. Our findings will indicate whether increasing process interference of the AAT is a viable way to elevate its reliability, or whether the field should consider alternative measurement instruments to assess automatic action tendencies in individuals with alcohol addiction.

Cognitive Bias Modification in Alcohol Use Disorder: A Revised and Updated IPD Bayesian Meta-Analysis

Speaker: **Ting Pan**, University of Amsterdam

Objective: Recent advances in Cognitive Bias Modification (CBM) for Alcohol Use Disorder (AUD), alongside methodological refinements in individual participant data (IPD)-meta-analysis, warranted an update of the 2019 IPD-meta-analysis on CBM effects in addiction. This study integrates new data, focuses exclusively on AUD, and applies a two-stage IPD framework to examine CBM's effects on cognitive bias, alcohol consumption, and relapse.

Methods: A two-stage IPD-meta-analysis was performed, using Bayesian-model-averaged meta-analysis, supplemented by Frequentist sensitivity analyses. The first stage estimated study-specific CBM effects, the second stage pooled these to examine within-study moderators (adherence, addiction-severity) and between-study moderators, including CBM type, control condition, additional therapy, training congruency, and context.

Results: 22 studies with 8050 participants were included. CBM consistently showed a modest effect on bias ($d = -0.21$, 95% CrI [-0.36, 0.00], $BF_{10} = 17.16$), though this effect diminished after adjustment. In contrast, CBM did not significantly reduce alcohol consumption. CBM also initially showed a moderate unadjusted effect on relapse (log OR = -0.26, 95% CrI [-0.38, -0.13], $BF_{10} = 117.07$), which weakened after adjustments. A

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positive correlation was found between adherence and relapse reduction, with no strong evidence for other moderators. Frequentist sensitivity analyses confirmed these findings. Exploratory univariate adjustments suggest that multivariable adjustment may have introduced uncertainty rather than ruled out the effect. Conclusions: This updated Bayesian IPD meta-analysis supports CBM's effectiveness in reducing cognitive biases and relapse. Though effects weaken after adjustments, it likely reflects heterogeneity and limited power rather than absence of true effects.

COGNITIVE MECHANISMS, INTERVENTION, AND PREVENTION FOR WORRY AND ANXIETY

Session type: **Symposium**

Time: 14.00-15.20, Tuesday, 16 September

Location: V002

Session Chair: **Ya-Chun Feng**, National Sun Yat-sen University

Cognitive biases, such as those in attention and interpretation, have been identified as key mechanisms underlying the development and maintenance of worry and generalized anxiety disorder (GAD). In addition, potentially distorted memory has been proposed as another relevant mechanism, although evidence in this domain remains limited. This symposium brings together three studies that examine these biases across different cognitive domains and explore the implications for intervention and prevention. Ya-Chun Feng of the National Sun Yat-sen University (Taiwan) investigates how individuals with high worry or GAD interpret and remember ambiguous information using an interpretation-memory bias paradigm. Nathan Pond of the University of Sussex (United Kingdom) will present a registered direct replication of a 5-session probe-based attention bias modification (ABM) protocol in high worriers, also examining the potential influence of demand effects within the paradigm. Britannia Volkmer of Kings College London (United Kingdom) focuses on the prevention of perinatal anxiety in pregnant women with high levels of repetitive negative thinking, through a 12-session interpretation bias modification (CBM-I) delivered in a randomized controlled trial. Follow-up assessments at 4, 8 and 36 weeks were conducted to evaluate the long-term effects of this preventive intervention. Together, these talks offer an updated perspective on cognitive mechanisms involved in worry and anxiety, as well as the opportunities and challenges of cognitive bias modification.

Interpretation-memory bias in individuals with high worry and GAD

Speaker: **Ya-Chun Feng**, National Sun Yat-sen University

Objective: Previous studies have found limited evidence linking worry or GAD to negative memory bias, which is the tendency to remember negative information. This may be due to the use of free-recall approach that fail to capture the cognitive mechanisms underlying worry. Therefore, the current study employed a combined cognitive biases approach, which may better reflect cognitive processes in real life by examining how individuals with worry or GAD interpret ambiguous information (interpretation bias), and how these interpretations subsequently distort their memory (interpretation-memory bias).

Methods: A total of 102 participants were recruited and categorised into low worry (n=30), medium worry (n=11), high worry (n=30), and GAD (n=31) groups based on scores from the PSWQ and a structured diagnostic interview for GAD. All participants completed an interpretation-memory bias measure adapted from Hertel et al. (2008), using materials relevant to worriers in the Taiwanese culture context.

Results: Findings showed that higher levels of worry were associated with greater negative interpretation bias and interpretation-memory bias. Both the high worry and GAD groups exhibited significantly more negative interpretation and interpretation-memory biases than the low worry group. While both high worry and GAD groups also demonstrated reduced benign interpretation bias compared to the low worry group, no significant group differences were found in benign interpretation-memory bias.

Conclusion: Memory distortions arising from negative interpretations may serve as a cognitive mechanism that maintains worry and GAD. These findings support the importance of targeting interpretation-related memory processes in cognitive interventions for anxiety.

The Efficacy of Attentional Bias Modification for Anxiety: A Registered Replication

Speaker: **Nathan Pond**, University of Sussex

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Generalised anxiety disorder (GAD) is a prevalent condition linked to the presence of attention bias. Attention bias modification (ABM) procedures have been developed aiming to alleviate anxiety symptoms. While initial findings were promising, the outcome of subsequent studies has been mixed, with some reporting moderate to large effect sizes, and others reporting non-significant effects. Furthermore, concerns have been raised regarding the potential for demand effects to contribute to significant findings. We revisited the efficacy of ABM, conducting a direct replication of one of the seminal studies showing successful alleviation of anxiety symptoms using multi-session ABM training (Hazen et al., 2009). As a secondary aim, we quantified the potential influence of demand effects in the paradigm. Participants (N = 104) who were classed as high worriers (PSWQ score ≥ 60) attended a total of seven lab-based sessions. This included a series of five probe-based ABM training sessions (or sham-training control), and a pre- and post-training session in which levels of attention bias, worry, trait anxiety and depression were assessed. We adopted a Bayesian approach to analyses with a series of Bayesian t-tests evaluating the change in each outcome measure from pre- to post-training. These analyses revealed sensitive evidence for the null hypothesis for all except the measure of depression (which was insensitive), and no sensitive evidence for demand effects. These findings demonstrate that probe-based ABM training does not lead to a robust reduction in bias or anxiety. Therefore, alternative ABM paradigms should be investigated.

Can we prevent perinatal anxiety? A randomised controlled trial evaluating interpretation training as a web-based early intervention for pregnant women at risk of escalating anxiety during pregnancy and after birth.

Speaker: **Brittannia Volkmer**, King's College London

Perinatal anxiety is common, with up to 40% of pregnant women and new mothers experience high levels of anxiety. Given its prevalence, interventions that are low-intensity, highly accessible and cost-efficient, and target modifiable risk factors for anxiety are needed. Repetitive negative thinking (RNT) – such as worrying about ways things will go wrong in the future or ruminating about past negative events – is a risk factor for the development of anxiety. RNT is maintained by the tendency to generate negative interpretations of ambiguous situations. This study investigates if we can help prevent escalating anxiety in the perinatal period.

A parallel two-arm randomised controlled trial will assess the efficacy of adding interpretation training (RELAX) to usual maternity care. Pregnant women with high levels of RNT, but not anxiety, (N = 268) were randomised to: (i) 12 sessions of online interpretation training (RELAX) plus usual care, or (ii) usual care alone. RELAX interpretation training was tailored to the day to day lives of pregnant women, and was completed over 4-weeks. Assessments were completed to assess anxiety, depression, RNT, and work and social adjustment at baseline, and 4, 8 and 36 weeks later.

Recruitment and data collection are complete. Those allocated to the active condition engaged well with the intervention. Retention to follow-up was excellent. Analysis will be completed by August. Findings will be presented and discussed.

NEW INSIGHTS INTO THE ASSESSMENT AND MODIFICATION OF COGNITIVE BIASES

Session type: **Individual Oral Presentations**

Time: 15.45-16.30, Tuesday, 16 September

Location: W201

Session Chair: Mike Rinck, Radboud University

Are there "kinds" of thought? Characterizing the within-person latent structure of repetitive thought in daily life

Speaker: **Lauren S. Hallion**, University of Regina

Objective: Perseverative (repetitive) thought is now well-established as a transdiagnostic symptom and mechanism of internalizing psychopathology. However, most of this work has been conducted at the between-person level. By contrast, our theories and interventions rely heavily on classification at the within-person level (e.g., "is [presenting thought] a worry or an obsession?") We therefore tested the latent structure

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of perseverative thought at the within-person level and examined its validity and utility for predicting other clinically- and theoretically relevant indices (e.g., mood; attentional control).

Method: N = 300 adult community participants oversampled for severe perseverative thought completed a 14-day ecological momentary assessment (EMA) protocol including ratings of thought uncontrollability, valence, form, and content. Participants also rated their mood, functional impairment, and attentional control at each signal.

Results: In preregistered analyses, the hypothesized five-factor structure emerged and outperformed a latent class (“thought type”) model, replicating and extending our earlier cross-sectional work (Hallion et al., 2022). Further analyses will examine the incremental utility of latent thought dimensions for predicting same- and next-signal mood and subjective attentional control. Exploratory analyses will also compare item-level responses (e.g., difficulty disengaging vs. intrusiveness) to probe more nuanced cognitive-emotional theoretical predictions.

Conclusion: A robust five-factor dimensional model (factors: uncontrollability; self-reference; retrospection; valence; apprehension) provided a strong fit to the data and outperformed a thought class model (“worry;” “rumination”) at both the between- and within-person level. We will also describe the concurrent and prospective associations of these dimensions to mood, functioning, and subjective attentional control in daily life.

Chronotype and emotion processing: a pilot study testing timing of online Cognitive Bias Modification training for facial emotion processing.

Speaker: **Charlotte Crisp**, University of Bristol

Objective: Circadian rhythms influence cognitive performance which peaks in the morning for ‘morning larks’ (early chronotypes) and evening for ‘night owls’ (late chronotypes). It is unknown whether cognitive interventions could be optimised at certain times-of-day. A pilot study testing whether the effectiveness of Cognitive Bias Modification (CBM) for facial emotion processing was improved when delivered at a time-of-day that was synchronised to chronotype.

Method: 173 healthy young adults (aged 18-25) with an early or late chronotype completed one online session of CBM training in either the morning (06:00hrs-10:00hrs) or evening (18:00hrs–22:00hrs).

Results: Moderate evidence that participants learnt better (higher post-training balance point) when they completed CBM training in the synchronous (evening for late chronotypes, morning for early chronotypes) compared to asynchronous (morning for late chronotypes, evening for early chronotypes) condition, controlling for pre-training balance point, sleep quality and negative affect. There was also a group x condition interaction where late chronotypes learnt faster and more effectively in synchronous vs. asynchronous condition.

Conclusion: Preliminary evidence that synchrony effects apply to this psychological intervention. Tailoring the delivery timing of CBM training to chronotype may optimise its effectiveness. This may be particularly important for late chronotypes who were less able to adapt to non-optimal times-of-day, possibly because they experience more social jetlag. We also suggest that chronotype and the delivery timing of CBM should be considered in future study designs. This may generalise to other psychological interventions and be relevant for online interventions where the timing can be flexible.

On the way we inform the participants of our CBM research: When lying can be more ethical than honesty

Speaker: **Mike Rinck**, Radboud University

There is consensus that ethical CBM research requires full information of participants, their informed consent, and their full debriefing. This may involve informing participants that they may receive an inactive control condition. As honest and correct as this may seem, I will argue that full honesty may actually decrease the validity of our studies and their potentially beneficial effects on participants. My argument is based on the accumulated evidence for the effect of outcome expectations on the success of treatments: We can reduce the beneficial effects of any intervention by telling participants that they cannot expect a positive effect („Sorry, you are in the control condition“), and we can possibly increase the effects by telling them that positive effects are to be expected. Therefore, our comparisons of active-vs-control conditions

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become invalid if we fail to create comparable expectations in all experimental conditions. Moreover, if we study potential clinical effects in patients and other vulnerable populations, the expectations should not only be comparable, they should also be as high as possible to maximize beneficial expectancy effects. Obviously, this creates a potential ethical conflict between full informed consent on one side, and valid research and maximized patient benefit on the other side. I will present a few ideas to reduce this conflict, for instance, by carefully phrasing the description of each experimental condition, by testing the equivalence of expectations, and by choosing an appropriate time for full or partial debriefing. These ideas will hopefully serve as a starting point for discussions.

THE INFLUENCE OF COGNITIVE BIASES ON MENTAL HEALTH & WELLBEING

Session type: **Keynote lecture**

Time: 16.45-17.45, Tuesday, 16 September

Location: W201

Speaker: **Elaine Fox**, The University of Adelaide

Selective processing of negative information has been associated with emotional vulnerability and reduced mental health. I will discuss the role of cognitive biases in maintaining emotional vulnerability and boosting mental wellbeing with an emphasis on our recent work with adolescents and whether incorporating genetic approaches may be a useful way forward in enhancing our understanding. Results from the CogBIAS longitudinal study, which collected data when adolescents were approximately 13 (n=504), 14.5 (n=450) and 16 (n=411) years of age will be highlighted. Using growth mixture modelling, we found four distinct developmental trajectories for anxiety and depressive symptoms and these trajectories were closely related to changes in cognitive biases, specifically interpretational and memory biases. Further analysis evaluated the role of cognitive biases in resilient functioning, which was measured in terms of 'better than expected levels of functioning' in response to significant adversity. Selective biases in memory and resilient functioning were found to be reinforcing mechanisms across the three different assessment points. Finally, a moderated network modelling analysis revealed that good mental health - flourishing - was associated with higher levels of positive memory and interpretation biases and with lower levels of negative memory biases. Of particular interest, network connectivity decreased with higher positive mental health ratings. In recent work, we have also found an interaction, such that a high degree of genetic risk (using polygenic risk scores) and more positive life experiences were associated with stronger positive interpretation biases. We conclude that cognitive biases, negative and positive, are important emotion regulation mechanisms that underpin resilience, good mental health as well as anxiety and depression symptoms in a cohort of adolescents.

Poster presentations

(in alphabetical order of presenter name)

Interpersonal Flexibility in Depression – Experimental Findings from a Socioeconomic Game

Presenter: **Alena Koop**, University of Marburg

Objective: Interpersonal models of depression emphasise the role of social-cognitive biases and maladaptive interpersonal behaviour to the development and maintenance of depressive symptomatology (Lipsitz & Markowitz, 2013; McCullough, 2003). Despite broad recognition of these models in research and clinical practice, few experimental studies have systematically investigated interpersonal flexibility in depression under dynamically changing social contexts. This study aims to empirically investigate whether depressive symptoms are associated with distinct interpersonal behaviour patterns and reduced flexibility in adapting to shifting social contexts.

Method: In a socioeconomic game, N = 160 participants (80 inpatients with diagnosed depression; 80 from general population) interact in 10 rounds each with two ostensible, actually computer-controlled interaction partners (hostile-dominant, friendly-cooperative, or random). In each round, they divide 100 points and assign decision weights to their own and the partner's proposal. Interpersonal behaviour is operationalised via point allocation (hostile – friendly) and decision weighting (submissive – dominant).

Results: As preregistered, we expect higher levels of depressive symptoms (assessed via PHQ-9) to be associated with more hostile and submissive interpersonal behaviour, reduced behavioural adaption when the social context shifts from hostile-dominant to friendly-cooperative, and behavioural adaption in the opposite direction. Preliminary analyses suggest that partner behaviour is perceived as intended and that participants generally adjust their behaviour accordingly. As data collection is ongoing, final results will be presented at the conference.

Conclusion: This study aims to identify context-sensitive interpersonal biases in depression. Findings may advance understanding of interpersonal processes in the development and maintenance of depressive symptomatology and inform targeted intervention strategies.

Identifying Neuro-cognitive-physiological Factors that Moderate Anxiety and Depression: A Behavioural Pilot Study

Presenter: **Alexandra Fakhri**, Max Planck Institute for Human Cognitive and Brain Sciences (MPI CBS)

Objective: Anxiety and depression are highly prevalent, often co-occurring disorders that exhibit significant heterogeneity. The Research Domain Criteria (RDoC) Framework proposes a transdiagnostic non-binary approach that incorporates several dimensions to characterize psychopathology. In line with the RDoC, our study aims to characterize symptom severity across disorders, based on cognitive bias measures. Cognitive biases - systematic alterations in information processing - are a core feature in both disorders. We have previously identified these biases in clinical and subclinical populations, suggesting a continuous association between symptom severity and cognitive biases rather than occurring after a fixed threshold. This behavioral study aims to examine cognitive biases underlying symptoms to improve diagnostic accuracy and identify disorder subtypes that may account for heterogeneity.

Method: We are conducting an online study, where participants (N ≈ 125) complete tasks assessing cognitive biases: 1) interpretation bias, 2) selective attention bias, 3) expectancy bias; and 4) emotional reactivity. To evaluate symptom severity, participants complete questionnaires measuring anxiety, depression, and somatic symptoms.

Response times and selection patterns from the tasks are collected. Correlation and regression analyses will be used to examine the relationship between cognitive biases and symptom severity. Additionally, we will employ cluster analysis to identify potential subgroups within the sample.

Results: Data collection is ongoing. Results are expected by September.

Conclusions: The study seeks to better characterize anxiety and depression by identifying subgroups differentiated by unique cognitive patterns. Findings may delineate cognitive profiles associated with

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symptom severity and allow the development of personalized cognitive-based interventions and diagnosis methods.

Flip the Script: Inference Shifting in Daily Life

Presenter: **Amit Ashkenazi**, The Hebrew University of Jerusalem

Objective: The ability to shift away from a depressogenic inference (i.e., global, stable, internal) to a benign one (external, unstable, specific) for a negative event, has been associated with improved mood and reduced state rumination in lab studies. This study investigated inferential shifts in daily life for the first time and tested the contribution of person-level, momentary states, and metacognitive variables to such shifts.

Method: 155 participants completed trait questionnaires and laboratory tasks assessing cognitive control, followed by a one-week diary (six prompts per day). On each prompt, participants reported a recent negative event and its inferred cause, along with ratings of mood, state rumination, hunger, social context, ease of generating the inference, and confidence in it. On the next prompt, they revisited the same event and could update their inference.

Results: Our preliminary findings show that reduced likelihood of shifting to a more benign inference was predicted by negative mood ($\beta = -0.098$, $p < .001$), state rumination ($\beta = -0.07$, $p = .018$) and hunger ($\beta = -0.085$, $p = .0266$), and by depressive symptoms ($\beta = -0.07$, $p = .016$), , trait rumination ($\beta = -0.09$, $p = .001$) and trait brooding ($\beta = -0.08$, $p = .006$).

Conclusion: These findings shed new light on factors underlying spontaneous inference shifts, offering a foundation for developing more targeted and context-sensitive interventions to enhance psychological flexibility.

Smile Because It Happened? Exploring the Relationship between Fear of Happiness, Fading Affect Bias, and Affect Recall Bias

Presenter: **Chloe Coster**, The New School for Social Research

Objective: Fading Affect Bias (FAB) highlights how intensity of negative affect fades quicker than that of positive affect. Affect Recall Bias (ARB), alternatively, refers to how affect initially experienced at the time of an event is remembered over time. Depression is associated with an attenuated or absent FAB, and the tendency to overestimate negative affect and underestimate positive affect retrospectively. Reward Devaluation Theory (RDT) posits that depressed individuals actively fear and avoid positive stimuli because previous positive experiences have led to bad outcomes. This study investigates the relationship between RDT, FAB, and ARB in an experimental design comparing how positive and negative emotionality related to positive or neutral memories changed over time.

Method: 32 participants filled out baseline questionnaires, including Fear of Happiness Scale (FOH), before recalling either a positive or neutral memory. Then, participants rated positive and negative affect in the moment, at the time that their event originally occurred, and looking back on the event. A buffer task was then completed. Finally, participants completed retrospective positive and negative affect ratings for how they remembered feeling when recalling their memory.

Results: A mixed design ANCOVA revealed a significant 3-way interaction between condition, memory type, and valence, $F(1,29)=4.393$, $p=.045$. As expected, positive correlations between FOH and ARB for positivity demonstrated that as FOH increased, underestimation of positivity grew, $\rho=.41$, $p=.02$.

Conclusion: This study lends support to RDT, showing that FOH may discriminately lead to active avoidance of positivity in the realm of memory.

Early Identification and Prevention of Postpartum Depression: The Role of Cognitive Biases

Presenter: **Daniel Ahrak**, University of Haifa

Objective: About 1 in 10 mothers experiences postpartum depression – a serious mental health condition with significant implications for the well-being of mother and infant. Although extensive research has been conducted on this topic, most studies have focused on the treatment of depressive symptoms after childbirth. In contrast, the potential of early identification and prevention of postpartum depression before childbirth remains underexplored. One proposed mechanism underlying postpartum depression is emotional processing biases already during pregnancy.

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Method: This study examines whether cognitive biases—specifically, biased processing of infant facial expressions and attentional biases—can serve as early markers of increased risk for developing postpartum depression. The study design enabled replication of predictive associations observed in our recent work between cognitive biases during pregnancy and postpartum depressive symptoms. Additionally, we compared the strength of associations between cognitive biases assessed prenatally versus postnatally and their link to postpartum depression. Finally, we explored the postnatal plasticity of cognitive biases and their relationship to changes in depressive symptomatology following childbirth.

Results: Preliminary results replicate prior findings: pregnant women rate happy infant faces as more arousing and positive than neutral or angry ones. These prenatal responses can be directly compared to the cognitive biases exhibited by participants during the postpartum task.

Conclusion: These findings are expected to highlight the role of cognitive biases as both early markers and dynamic risk factors for postpartum depression. Understanding the timing and plasticity of these biases may inform the development of more targeted preventive interventions for women at risk of postpartum depression.

Do ADHD Symptoms Attenuate the Negative Relationship Between Fear of Happiness and Positive Choice Selection on the Valence Selection Task?

Presenter: Ethan Jahan Beberness, The New School for Social Research

Objective: Reward Devaluation Theory (RDT) helps explain how and why some depressed persons perceive positivity as a threat and thus avoid it automatically in their daily lives. Most measurements for reward devaluation are limited in their reflection of real-life situations. The novel Valence Selection Task (VST; Urena et al., 2025) potentially solves this issue via a set of simple scenarios that reveal patterns of ecologically-valid biases, including unconscious avoidance of positivity.

Method: We tested the viability of the VST in relation to self-reported fear of happiness (FHS), using non-parametric correlations, replicating the initial studies. We also conducted moderation analyses to examine whether symptoms of attention-deficit hyperactivity disorder (ADHD) moderates the established relationships between FHS and valenced-based choice selection on the VST (Cremone et al., 2018).

Results: We found continued strong support for the VST as a measure of reward devaluation, detecting a significant negative correlation between FHS scores and positively-valenced VST response ratios ($rs[45] = -0.416, p = 0.004$) and a significant positive correlation between FHS scores and negatively-valenced VST response ratios ($rs[45] = 0.366, p = 0.012$).

Including ADHD as a moderator improved the model seeking to predict negative VST responses from FHS scores ($\Delta R^2 = 0.075, p = 0.036$). No other significant differences emerged in the moderation analyses.

Conclusion: Results strongly replicate the initial findings implicating the VST as a robust measure of reward devaluation. It also appeared that ADHD severity did not meaningfully attenuate this effect. However, further investigation of this complex interrelationship is warranted.

The Role of Attentional Biases in Emotional Resilience

Presenter: Hannah Abdul Razak, The University of Western Australia

Objective: Adversity is an inevitable part of life, yet individuals differ in the degree to which they emotionally recover from such experiences. Emotional resilience, which refers to one's ability to demonstrate more positive emotional outcomes than expected in relation to the adversity experienced, is a key construct describing these differences. Theorists have proposed that emotionally resilient individuals implement more adaptive attentional bias processing when experiencing adversity. This study tested the hypothesis of whether emotionally resilient individuals have higher attentional bias alignment, in that they show greater attentional bias for threat that they can control, relative to threats they cannot control.

Method: Undergraduate participants completed a modified dual-probe task, assessing participants' attention bias towards threat cues signalling an impending danger. Additionally, to permit assessment of attentional bias alignment, participants could avoid exposure to a danger predicted by the threat cue in some blocks but not others. Alignment was indexed using the difference in attentional bias towards threat cues between these block types. Participants' emotional resilience was also assessed.

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Results: Our findings support the hypothesis that emotionally resilient individuals demonstrate higher attentional bias alignment, by attending to threat cues more when avoidance of danger is possible relative to when it is not possible.

Conclusion: These findings contribute to current theoretical understandings of emotional resilience, suggesting that the ability to adaptively attend to threat only when control is possible may be a key factor in promoting emotionally resilient outcomes.

Attentional Biases as Predictors of Real-World Behaviour in Socially Anxious Individuals

Presenter: Kean J. HSU, National University of Singapore

Objective: Social anxiety disorder (SAD) is characterised by heightened fear of negative evaluation and is associated with cognitive mechanisms such as attentional biases for socially threatening stimuli. While such biases have been well-documented in laboratory paradigms, their predictive value for real-world behaviour remains unclear. This study investigated the extent to which threat biases predict social behaviours, which includes avoidance and interactions, and the emotional experience during social interactions.

Methods: Forty-five participants with either high social anxiety (LSAS-SR > 60; n = 37) or low social anxiety (LSAS-SR < 30; n = 8) completed an eye-tracking free-viewing task measuring attention to visual stimuli of different categories, followed by a behavioural observation involving a deception paradigm and a one-week follow-up survey assessing real-world social behaviours.

Results: No significant differences in threat-related attentional bias emerged between high and low social anxiety groups; however, a general pattern of attentional avoidance toward threat stimuli was found. Contrary to initial hypotheses, greater fixation on threat cues was associated with increased avoidance behaviours, and attentional avoidance predicted lower self-reported social interaction frequency. Attentional bias did not mediate the relationship between social anxiety and real-world behaviours, nor did it predict emotional distress during social interactions.

Conclusion: These findings suggest that attentional avoidance, rather than vigilance, may be more relevant in understanding social functioning in SAD. Moreover, findings suggest that attentional bias alone may not account for behavioural outcomes, underscoring the importance of considering broader cognitive and emotional regulation processes.

AI Tools for CBM Research

Presenter: Konrad Schweizer, Radboud University

AI tools can compress weeks of work into days, but the current landscape is fragmented and difficult to navigate. The goal of this poster is to present a workflow-oriented toolbox of the most useful AI tools tailored to the needs of CBM researchers. At a general level, the toolbox will include tools for idea generation, literature search, systematic review, and data analysis all the way through to aligning manuscripts with journal guidelines. At a CBM-specific level, it will feature tools that can automatically code bias assessment and modification tasks from verbal instructions or pen-and-paper drawings, as well as tools that generate video, image, or auditory stimuli for measuring and modifying attention, interpretation, or action tendencies. Real-life application examples will be provided. However, the use of AI is not without risks. Therefore, the poster will also include key components from a recent paper on responsible AI usage guidelines.

Pain Acceptance Training for Somatic Symptoms and Emotional Distress: The Mediating Role of Dialectical Thinking

Presenter: Leehe Carmel, University of Haifa, Israel

Objective: Somatic symptom disorders affect 5–7% of the population and often co-occur with depression, anxiety and attention-biases towards pain-related stimuli. While psychological factors contribute significantly to the onset and persistence of somatic symptoms, conventional psychotherapies show limited effectiveness.

Pain-acceptance training is a new intervention based on dialectical thinking that promotes non-judgmental acceptance of pain. Prior research with healthy individuals showed reduced pain-sensitivity, reduced pain-catastrophizing, and increased pain-threshold following training.

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This study aims to translate these outcomes to a clinical setting and examine: 1-the efficacy of pain-acceptance training in alleviating somatic pain in patients with somatic symptoms; 2-the role of dialectical thinking as a mediator.

Method: 60 psychiatric participants are randomly assigned to a training or control group. All participants complete baseline assessments including self-report questionnaires, a task measuring attention-bias towards pain, and a Cold Pressor Task assessing pain threshold and tolerance. Then, the training group is introduced to the acceptance strategy, which they practice at home for two weeks. All participants complete Ecological Momentary Assessments over a two-week period and return for a post-intervention assessment, followed by a follow-up assessment two weeks later.

Results: Preliminary findings reveal a significant reduction in pain catastrophizing and attention bias towards pain, a significant increase in pain-related self-efficacy, and increased pain tolerance, following the intervention.

Conclusions: These preliminary findings indicate that pain acceptance training may offer an effective intervention for patients with chronic pain and emotional distress. Its flexible delivery, in-person or online, makes it accessible to diverse patient populations.

A randomized controlled trial modifying insomnia-consistent interpretation bias in students

Presenter: **Marloes Duijzings**, University of Sydney

Objective: Insomnia symptoms are highly prevalent among students and can negatively impact mental health, academic performance, and cognitive functioning. According to the cognitive model of insomnia, a maintaining factor is interpretation bias, where neutral situations are perceived as sleep-related threats. While Cognitive Bias Modification for Interpretation (CBM-I) has successfully reduced interpretation biases in other psychological conditions, its application to insomnia remained unexplored.

Method: This study tested whether a single session of CBM-I could reduce insomnia-related interpretation bias and improve sleep among students with subclinical insomnia symptoms. A sample of 128 students was randomly assigned to either an online CBM-I session or a sham training session. Participants then tracked pre-sleep worry and sleep parameters for seven days. Interpretation bias was assessed pre- and post-training using an insomnia-specific encoding-recognition task, where participants interpreted ambiguous scenarios. In CBM-I, participants were consistently guided toward benign interpretations, while the sham condition left scenarios unresolved. A 2 (CBM-I vs. sham) × 2 (pre- vs. post-training) mixed ANOVA examined changes in interpretation bias, and multilevel modeling analyzed effects on pre-sleep worry and sleep outcomes.

Results: CBM-I significantly reduced insomnia-consistent interpretation bias compared to sham training, with bias absent in the CBM-I group after treatment. However, reductions in bias did not lead to improvements in pre-sleep worry or sleep parameters.

Conclusion: This study shows that insomnia-consistent interpretation bias is modifiable using a single session of online CBM-I. Further research is warranted to clarify the role of interpretation bias in insomnia and enhance CBM-I efficacy.

The Significance of Negative Beliefs: A Multimethod Research Project on Expectation Updating in Depression

Presenter: **Matthias Schmitz**, Rheinland-Pfälzische Technische Universität

Theoretical Background: Depression is closely linked to negative beliefs, and recent research highlights how these beliefs respond to new information. While non-depressed individuals tend to adjust beliefs based on both positive and negative input, those with depression struggle to integrate positive information, indicating a cognitive bias. As cognitive behavioral therapy (CBT) relies on learning from new experiences, understanding this bias has important clinical implications.

Research Objective: This project investigates how individuals with depression update expectations when presented with positive information. Additionally, a longitudinal design will explore how this bias affects depression's course and CBT outcomes.

Method: Three groups - individuals with depression, with other psychological disorders, and individuals with no psychological disorders - will be compared in their ability to revise negative expectations. Participants will be recruited from the Landau university outpatient clinic and assigned to groups via a structured interviews.

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Each participant will complete four experimental tasks across three time points. Two tasks (EXPECED & LOOP) examine how performance expectations change after positive feedback. The other two tasks assess interpersonal expectation updating: one through scenarios (BADE) and one via real social feedback (Monopoly). It is hypothesized that individuals with depression will show reduced belief updating in response to positive input. The study also aims to determine whether difficulties in processing positive information predict weaker responses to CBT over the first 12 sessions.

Results: Data collection began in September 2024; results are not yet available.

Does interpreting the world as more positive reduce social anxiety? Ecological validation of cognitive training for interpretation bias among individuals with social anxiety disorder

Presenter: **Noy Front**, University of Haifa

Treating social anxiety disorder (SAD) often improves self-reported feelings more than actual social behavior. Interpretation bias, the tendency to interpret ambiguous social scenarios negatively, is a significant factor in SAD. While Cognitive Bias Modification for Interpretation (CBM-I) has shown efficacy in reducing social anxiety symptoms, its effect on actual social behavior is less understood. This study aims to assess the impact of CBM-I on behavior, specifically the motivation to be included in social situations.

A total of 64 participants with SAD are planned to be enrolled in the study. So far, 55 participants have been randomly assigned to either a CBM-I or Dummy-CBM control group. In the CBM-I group, participants were trained to interpret ambiguous social scenarios in a benign manner, while in the Dummy-CBM group, both threatening and benign interpretations were equally reinforced. Behavior was assessed using a version of the Cyberball paradigm, in which participants could actively influence their inclusion by waving a virtual hand. Interpretation bias was measured through tasks involving ambiguous scenarios and emotional facial expressions. This study aimed to bridge the gap between symptom reduction and improved social behavior in SAD.

Preliminary results (n=55) show that participants in the CBM-I group waved significantly less during the social task and reported feeling more important. Furthermore, they interpret ambiguous situations and emotional facial expressions as being significantly less negative compared to the control group. These preliminary findings suggest that cognitive training for interpretation bias has a potential to relieve SAD symptoms and enhance social motivation and behavior.

The Sound of Silence: Gaze-Contingent Attention Training as a Negative Reinforcement Paradigm in Depression

Presenter: **Shani Lavi**, Tel Aviv University

Objective: Anhedonia, a key characteristic of Major Depressive Disorder, has been recently conceptualized as an intricate dysfunction in reward processing. Research on reward-based Selection History has shown that when using neutral stimuli and positive reinforcement, depressed individuals exhibit intact (online) learning of stimulus-reward associations, but impaired transfer of learning. However, using negative reinforcement resulted in intact transfer effects. This study replicates and extends prior findings with neutral stimuli by examining online learning and subsequent transfer effects using emotional stimuli - training toward happy faces and away from sad faces, using a gaze contingent negative reinforcement paradigm.

Method: Participants with high (n=25) and low (n=28) levels of depression underwent an eye-tracking-based white noise contingency task in which gazing at faces with dysphoric expressions triggered aversive white noise, whereas gazing at happy expression did not. Participants completed 4 training blocks in two separate sessions, and their attention allocation was evaluated before and after training using a free-viewing task with similar stimuli.

Results: Attentional biases towards sad and away from happy faces in the high-depression group were found in the pre-training assessment but this pattern did not emerge in the post-training assessment. No group differences were found in online-learning.

Conclusion:

These findings underscore the potential value of incorporating negative reinforcement principles into therapeutic frameworks for depression, emphasizing the reduction of aversive experience as a mechanism for change.

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Exploring the Link Between Fear of Happiness, Nostalgia, and Implicit Emotional States.

Presenter: **Silver Liftin**, The New School for Social Research

Objective: Reward Devaluation Theory (RDT) posits that some individuals fear and avoid happiness (FOH), which relates to the inhibition of positively-valenced memories. Nostalgia is the recollection of a warm, formative memory. Whether FOH impacts nostalgia is unknown. The present study thus explores the relationship between FOH and nostalgia. As predicted by RDT, we hypothesized that FOH would be negatively associated with happiness in the control condition and that this relationship would increase during the nostalgia condition, because those high in FOH would be uncomfortable with the positive sensations that nostalgia evokes.

Method: Participants completed an FOH measure and the Event Reflection Task (ERT), during which 19 participants recalled a nostalgic memory and 21 recalled a neutral memory. Emotional reactions to the nostalgia induction task were measured using the Implicit Measurement of Distinct Emotional States (IMDES), which asks people to rate abstract artistic images via categorical emotions.

Results: There was an interaction between memory condition and FOH on IMDES happiness, $b = .056$, $t(36) = 2.54$, $p = .016$, 95% CI [0.01, 0.1]. In the neutral condition, higher FOH was associated with lower happiness, $b = -0.05$, $t(36) = -3.76$, $p < .001$, 95% CI [-0.08, -0.02]. However, this effect was not present in the nostalgia condition, $b = 0.004$, $t(36) = .22$, $p = 0.82$, 95% CI [-0.03, 0.04].

Conclusion: The devaluative positivity bias seen in the neutral condition was not present in the nostalgia condition, implying that nostalgia may in fact temper reward devaluation.

Cognitive Bias Modification for Interpretation Mitigates Nocebo Hyperalgesia

Presenter: **Tessa Rooney**, University of Sydney

Objective: Nocebo hyperalgesia refers to the experience of increased pain which is not due to a pain inducing stimulus or treatment. Given that nocebo hyperalgesia results from expectancies generated by the treatment context, it is plausible that the extent to which the treatment context elicits expectancies and therefore pain is influenced by the individual's pain-related interpretation bias. If so, then cognitive bias modification for interpretation (CBM-I) may pose a means to minimise nocebo hyperalgesia.

Methods: CBM-I was used to induce biases towards pain interpretations or towards benign interpretations. This involved presenting a series of ambiguous scenarios that ended in a word fragment, where participants were required to complete the word fragment which would resolve the ambiguity as either pain-related or benign. Participants then completed a nocebo instruction and conditioning induction, where a sham treatment was paired with increased thermal pain stimuli. A nocebo test phase followed where treatment and no-treatment trials were paired with identical thermal pain, such that any difference would be indicative of nocebo hyperalgesia.

Results: Results found reliable evidence of nocebo hyperalgesia, which was mediated by pain expectancy. Interpretation bias was also successfully manipulated between CBM-I groups. Critically, participants who received CBM-I training away from pain exhibited significantly smaller nocebo hyperalgesia than the towards pain training group.

Conclusion: These results highlight the importance of interpretation bias as a causal factor in pain experience and nocebo hyperalgesia specifically. Given this, modifying interpretation biases away from pain may provide a cheap and effective intervention to mitigate nocebo hyperalgesia.