

PROCEEDINGS
of
Rome Workshop on Experimental
Psychopathology
Rome, May 26th – 27th 2017



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PROCEEDINGS

of Rome Workshop on Experimental Psychopathology

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Rome Workshop on Experimental Psychopathology 2017



PROCEEDINGS

Rome, March 20th – 21st 2015

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PROCEEDINGS OF THE ROME WORKSHOP ON EXPERIMENTAL PSYCHOPATHOLOGY

Rome, May 26th - 27th 2017

Venue of the workshop
AUDITORIUM VIA RIETI, Via Rieti 13, 00198, Rome, Italy

Scientific Committee

Chiara Baglioni (University G. Marconi, Italy)

Barbara Basile (Scuola di Psicoterapia Cognitiva-Rome, Italy)

Maurizio Brasini (Scuola di Psicoterapia Cognitiva-Rome, Italy)

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Ernst Koster (Ghent, University, Gent, Belgium)

Francesco Mancini (School of Cognitive Psychotherapy; University G. Marconi, Rome, Italy)

Roberta Trincas (School of Cognitive Psychotherapy, Rome, Italy)

Preface

Beginning in the 1960s, contemporary Experimental Psychopathology (EP) is primarily devoted to laboratory research on the cognitive, affective, and motivational bases of mental disease by using behavioural, as well as psychophysiological and neurobiological paradigms. Therefore, EP aims at understanding what causes and maintains psychological distress by integrating knowledge and research methods from different domains. Guided by the assumption that mental diseases can be explained by the same processes that regulate normal behaviours, such a discipline aims to be a bridge between basic and applied research, providing useful knowledge to make clinical assessments and treatments more effective and scientifically-based.

The Workshop is the second international meeting completely focused on Experimental Psychopathology, and it differs from larger congresses in so far as there is a relatively small number of speakers without concurrent talks. In addition to the individual talks, a poster session for students, post-docs, and young researchers to present their work was included.

The ultimate goal of the Workshop is to promote the scientific debate on EP, and the development of international networks among clinical and basic researchers.

It is dedicated to the presentation and discussion of empirical studies relevant to experimental psychopathology. Therefore, studies using an experimental approach to describe and understand the cognitive, affective, and motivational mechanisms underlying specific mental diseases or transdiagnostic processes (attentional bias, memory bias, perseverative cognition, etc.) were considered. Experimental studies aimed at explaining change processes in specific psychotherapy or therapeutic techniques, as well as correlational designs, meta-analyses, epidemiological and single-case studies were also accepted. Studies of interest can focus on patients with specific diagnoses, non-clinical human populations, human analogue populations, or nonhuman animals. Moreover, while the Workshop's focus is primarily on the mental processes associated with psychopathology, contributions studying the biological substrates of psychopathology were also included. In the traditional spirit of experimental psychopathology, studies on non-clinical populations that make a contribution to understanding the aetiology of psychopathology were principally considered.

WORKSHOP PROGRAM

Friday, May 26th 2017	Saturday, May 27th 2017
8.30-9.00 Registration	
9.00-10.15 Oral Session	9.00-10.00 Symposium
10.15-10.45 Coffee break	10.00-10.30 <i>Invited Lecture</i> Paul Salkovskis
10.45-11.15 <i>Invited Lecture</i> Peter de Jong	10.30-11.00 Coffee break
11.15-12.15 Symposium	11.00-12.15 Oral Session
12.15-13.00 Poster Session	12.15-12.45 <i>Invited Lecture</i> Christine Purdon
13.00-14.15 Lunch time	13.00-14.15 Lunch time
14.15-15.30 Oral Session	14.15-15.30 Oral Session
15.30-16.00 Coffee break	15.30-16.15 Coffee break
16.00-16.30 <i>Invited Lecture</i> Edward Watkins	16.15-17.15 Symposium
16.30-17.15 Symposium	17.15-17.45 <i>Invited Lecture</i> Amelia Gangemi
20.00 Social Dinner	

FRIDAY, MAY 26th

Registration

8.30 - 9.00

Oral session

9.00 - 10.15

Chair: *Maurizio Brasini*

1) Does rumination effect the frequency and associated distress of personally relevant, intrusive thoughts? An experimental study in an analogue student sample
Wahl Karina; Clinical Psychology and Epidemiology, University of Basel, Switzerland

2) Internet-based attentional bias modification training as add-on to regular treatment in alcohol and cannabis dependent outpatients
Janika Heitmann; University of Groningen, The Netherlands

3) The longitudinal effects of repetitive tDCS on cigarette consumption: An EMA and EEG study
Ilse Verveer; University of Rotterdam, The Netherlands

4) The influence of yoga on (chronic) depression and potential cognitive mediators
Nina Vollbehr, Center for Integrative Psychiatry, Lentis Mental Health Care, Groningen, the Netherlands

5) The association between 5HTT polymorphisms, Neuroticism and Avoidance Coping in elite athletes
Annamaria Petito, University of Foggia, Italy

Coffee break

10.15 - 10.45

Invited lecture

10.45 - 11.15

The dirt road to psychopathology: A disgust perspective on the development of mental disorders.

Peter de Jong, University of Groningen, Netherlands

Symposium

Cognitive Mechanisms of Obsessive Compulsive Disorder

11.15 - 12.15

Chair: *Ela Oren*

1) Attenuated Sense of Agency and Obsessive Compulsive Tendencies
Ela Oren, School of Psychological Sciences, Tel Aviv University, Israel

FRIDAY, MAY 26th

2) Proprioception, Movement and Obsessive Compulsive Tendencies

Or Ezrati, School of Psychological Sciences, Tel Aviv University, Israel

3) Making social judgements based on one's own emotional reaction versus external information in individuals with high versus low obsessive-compulsive tendencies

Marit Hauschildt, School of Psychological Sciences, Tel Aviv University, Israel

4) Explicit Instructions Facilitate Performance of OCD Participants but Impair Performance of non-OCD Participants on the Serial Reaction Time Task

Assaf Soref, The Jaime and Joan Constantiner School of Education, Tel Aviv University, Israel

Poster Session

12.15 - 13.00

1) Maria Ciccarelli, University of Campania "Luigi Vanvitelli", Italy; *The role of craving and maladaptive personality traits in adolescent gambling.*

2) Zdenka Novović, Department of Psychology, Faculty of Philosophy, University of Novi Sad, Serbia; *Mediation of interpretative bias between self-schema consolidation and depressive symptoms.*

3) Raffaella Cerisoli, University of Campania "Luigi Vanvitelli", Italy; *I'm not fat, I'm pregnant! A study on body image, dissatisfaction body and pregnancy.*

4) Marija Drapšin, Department of Psychology, Faculty of Philosophy, University of Novi Sad, Serbia; *Global Self-Esteem and Self-Concept Clarity: Potential mechanisms underlying self-schema effects on depression and anxiety symptoms.*

5) Jelena Laketić, Faculty of Philosophy, Department of Psychology, Novi Sad, Serbia; *Relation between paranoid and dysphoria symptoms in context of self-esteem: network approach.*

6) Weike Xia, Swansea University, UK; *Do too many safety measures actually increase fear? Threat perception towards conditioned safe stimuli is increased following avoidance.*

7) Federica Visco-Comandini, School of Cognitive Psychotherapy (SPC), Rome, Italy; *A Comparison of Obsessive-Compulsive Disorder scales.*

8) Cinzia Giorgetta, Italian Society of Cognitive Behavioural Therapy (SITCC) Trentino-Alto Adige, Italy; *Parkinson Disease: A study on shame and cognitive reappraisal.*

9) Barbara Basile, Association of Cognitive Psychotherapy (APC) Rome, Italy; *Imagery with rescripting with patients with Obsessive-Compulsive Disorder and other Axis I disorders: an observational study*

10) Katia Tenore, School of Cognitive Psychotherapy (SPC), Rome, Italy; *Schema Therapy Model applied to depressed individuals.*

11) Annalisa Bello, School of Cognitive Psychotherapy (SPC), Lecce, Italy; *Rubber Hand Illusion: an ally against OCD?*

FRIDAY, MAY 26th

12) Barbara Depreeuw, KU Leuven, Belgium; *The Principle Of Fear Proportionality And Its Impairment In Anxiety Disorders*.

13) Elena Bilotta, Terzo Centro di Psicoterapia Cognitiva, School of Cognitive Psychotherapy (SPC), Rome, Italy; *Implicit measures and Psychopathy: A review*.

14) Paola De Bartolo, Marconi University; IRCCS Fondazione Santa Lucia, Rome, Italy; *Transgenerational effects of maternal environmental enrichment on stress responses of offspring*.

15) Salvatore Iuso, Department of Clinical and Experimental Medicine, Psychiatry Unit, University of Foggia, Foggia, Italy; *The relationship between Harm Avoidance, 5HTT polymorphisms, and Emotional Arousal Control in male elite athletes*.

16) Roberta Trincas, School of Cognitive Psychotherapy (SPC), Rome, Italy. Why people ruminate? The role of goals in the rumination process.

17) Marco Giugliano, Department of Psychology, Sapienza University of Rome. Personality and memory bias in depression.

Lunch time

13.00 - 14.15

Oral session

14.15 - 15.30

Chair: *Manuel Petrucci*

1) Mechanisms of interplay between cognition and emotion during resting state
Jelena Sokić, Department of Psychology, University of Novi Sad, Serbia

2) Looking the Audience in the Face: Relations with Social Anxiety and Public Speaking Anxiety
Esther Van den Bos, Leiden University, the Netherlands

3) An examination of the role of goal-directed worry rules in pathological worry from a neural and autonomic perspective
Professor Graham Davey, University of Sussex and Dr Frances Meeten, Institute of Psychiatry, Psychology, and Neuroscience, King's College London

4) Social-Rank versus Affiliation Self-Evaluations in Social Anxiety
Eva Gilboa-Schechtman, Bar-Ilan University, Israel

5) Cognitive Bias Modification of Depressive Attributions.
Nilly Mor, Hebrew University of Jerusalem, Israel

Coffee break

15.30 - 16.00

FRIDAY, MAY 26th

Invited Lecture

16.00-16.30

Extending experimental psychopathology research into clinical trials: the IMPROVE2 study

Edward Watkins, University of Exeter, UK

Symposium

Cognitive mechanisms governing depressive rumination

16.30-17.15

Chair: *Edward Watkins*

1) Eye-gaze contingent attention training (ECAT): Examining the causal role of attentional mechanisms in emotion regulation processes

Alvaro Sanchez, Ghent University, Belgium

2) Specificity and overlap of attention and memory bias in depression

Igor Marchetti, Ghent University, Belgium

3) Cognitive control training for remitted depressed patients: Effects of a double-blind RCT

Ernst Koster, Ghent University, Belgium

4) Testing the attentional scope model of rumination: from the laboratory to everyday life.

Lin Fang, Ghent University, Belgium

Social Dinner

20.30

SATURDAY, MAY 27th

Symposium

Sleep quality and psychopathology

9.00 - 10.00

Chair: *Chiara Baglioni*

1) Can't shake that feeling: fragmented sleep interferes with overnight dissolving of emotional distress.

Eus Van Someren, Department of Sleep and Cognition, Netherlands Institute of Neuroscience on Institute of the Royal Netherlands Academy of Arts and Sciences, Amsterdam, The Netherlands.

2) Sleep in eating disorders

Caterina Lombardo, Department of Psychology, Sapienza University of Rome

3) Sleep characteristics of mental disorders

Chiara Baglioni, Department TECOS, Telematic University of Rome "G. Marconi", Rome, Italy; Department of Clinical Psychology and Psychophysiology, Clinic of Psychiatry and Psychotherapy, University Medical Center Freiburg, Germany.

Invited Lecture

10.00-10.30

Title of lecture: *Understanding how the world really works? Lessons from research in psychopathology*

Paul Salkovskis, University of Bath, UK

Coffee break

10.30 - 11.00

Oral Session

11.00 - 12.15

Chair: *Elena Bilotta*

1) The simulation heuristic, paranoia, and social anxiety in a non-clinical sample

Gary Brown, Royal Holloway University of London, UK

2) Spatial processing in adults with attention deficit hyperactivity disorder (ADHD)

Eyal Kalantheroff, Department of Psychology, The Hebrew University of Jerusalem, Israel

SATURDAY, MAY 27th

3) Attentional bias modification training for unsuccessful dieters

Nienke Jonker, University of Groningen, the Netherlands

4) Vulnerability to depression: Rumination and cognitive reactivity and their relationship to habitual response tendencies

Ragnar P. Olafsson, Department of Psychology, University of Iceland, Reykjavík, Iceland

Invited lecture

12.15 - 12.45

Towards a better understanding of compulsions

Christine Purdon, University of Waterloo, Canada

Lunch time

12.45 - 14.00

Oral session

14.00 - 15.30

Chair: *Stefania Fadda*

1) Deontological guilt elicits disgust and Obsessive-Compulsive Disorder-like washing behaviors

Cristina Ottaviani, Sapienza University of Rome, Italy

2) Schemas, Modes and Coping styles in patients with Obsessive-Compulsive Disorder.

Barbara Basile, Association of Cognitive Psychotherapy (APC) Rome, Italy

3) Sharing honours and obligations: the role of interpersonal motivations and values.

Maurizio Brasini, School of Cognitive Psychotherapy (SPC); Marconi University, Rome, Italy

4) The role of cognitive control mechanisms in selective attention towards emotional stimuli

Manuel Petrucci, Department of Psychology, Sapienza University of Rome, School of Cognitive Psychotherapy (SPC), Rome, Italy

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5) Association between attention and heart rate fluctuations in pathological worries.
Simone Gazzellini, Bambino Gesù Children's Hospital, School of Cognitive Psychotherapy (SPC), Rome, Italy

6) Rumination: functions and goals. A review of literature
Chiara Schepisi, School of Cognitive Psychotherapy (SPC), Rome, Italy

7) Construal level and goal disengagement: construing unattainable goals in abstract terms impairs disengagement.
Mauro Giacomantonio, School of Cognitive Psychotherapy (SPC), Rome, Italy

Coffee Break

15.30 - 16.00

Symposium

The legacy of Paul Eelen: An anthology of learning research in Leuven

16.00 - 17.00

Chair: *Ann Meulder*

Acquisition and generalization of trigger beliefs in allergic rhinitis.
Omer Van den Bergh; University of Leuven, Belgium

Temporal Dynamics of relief in avoidance conditioning and fear extinction:
Experimental validation and clinical relevance
Bram Vervliet, KU Leuven, Belgium

Generalization of pain-related fear in chronic pain
Ann Meulders, University of Leuven & Maastricht University

The presence of your absence: An appetitive conditioning theory of prolonged grief
Yannick Boddez, KU Leuven, Belgium

Invited lecture

17.00 - 17.30

Strategies in reasoning in patients with psychological illnesses

Amelia Gangemi, University of Messina, School of Cognitive Psychotherapy - Istituto Gabriele Buccola (IGB), Palermo, Italy

LECTURE
FRIDAY, MAY 26th

10.45 - 11.15

PETER de JONG

The dirt road to psychopathology: A disgust perspective on the development of mental disorders

University of Groningen, Netherlands

Contact: p.j.de.jong@rug.nl

Disgust is a strong emotion that is characterized by negative appraisals, pervasive avoidance tendencies, and distinct defensive reflexes. Until recently, disgust received only scant attention in clinical psychological science and has even been framed as “the forgotten emotion in psychopathology”. This situation is changing with a rapidly growing scientific interest in disgust as a relevant factor in psychiatric disorders. This presentation will discuss research illustrating the relevance of disgust for our understanding of psychopathology and provide a concise review of studies showing how disgust-based mechanisms might contribute to the development of various mental disorders.

LECTURE
FRIDAY, MAY 26th

16.00 - 16.30

EDWARD WATKINS

Extending experimental psychopathology research into clinical trials: the IMPROVE2 study

University of Exeter, UK

Contact: e.r.watkins@exeter.ac.uk

Although there are effective psychological interventions for depression, our best treatments achieve remission rates less than 1/3 and limited sustained recovery. Underpinning this efficacy gap is limited understanding of how complex psychological interventions for depression work (Holmes et al., 2014). Recent reviews have argued that the active ingredients of therapy need to be identified so that therapy can be made briefer, more potent, and to improve scalability (Institute of Medicine, 2015). This in turn requires the use of rigorous experimental study designs that test the presence or absence of individual therapeutic elements, rather than standard comparative randomised controlled trials. One such approach is the use of efficient experimentation such as factorial designs to identify active factors in complex interventions. I describe the application of this approach to CBT for depression. A Phase III randomised, single-blind balanced fractional factorial trial, based in England and conducted on the internet, is currently testing the active ingredients of internet cognitive-behavioural

therapy (CBT) for depression. Adults with depression (operationalized as PHQ-9 score ≥ 10), recruited directly from the internet and from an UK National Health Service Improving Access to Psychological Therapies service, are randomized across seven experimental factors, each reflecting the presence versus absence of specific treatment components (activity scheduling, functional analysis, thought challenging, relaxation, concreteness training, absorption, self-compassion training) using a 32-condition balanced fractional factorial design. The primary outcome is symptoms of depression (PHQ-9) at 12 weeks. Better understanding of the active ingredients of efficacious therapies, such as CBT, is necessary in order to improve and further disseminate these interventions. This study is the first application of a component selection experiment to psychological interventions in depression and will enable us to determine the main effect of each treatment component and its relative efficacy, and cast light on underlying mechanisms, so that we can systematically enhance internet CBT.

LECTURE

SATURDAY, MAY 27th

16.00 - 16.30

PAUL SALKOVSKIS

Understanding how the world really works? Lessons from research in psychopathology

University of Bath, UK

Contact: Pms33@bath.ac.uk

In this presentation, I will consider the way in which we have improved both our understanding and treatment of psychological problems and how we can continue this process. Drawing from examples across a range of anxiety related problems including OCD and health anxiety, dialectical issues such as the importance of transdiagnostic vs problem specific research, the evaluation of key factors using analogue vs clinical research strategies, problem relevant vs problem specific processes and so on. The importance of theory focussed research will be emphasised in terms of the evolution of theories, failed paradigm shifts and the value of empirical grounding.

LECTURE

SATURDAY, MAY 27th

12.15 - 12.45

CHRISTINE PURDON

Towards a better understanding of compulsions

University of Waterloo, Canada

Contact: christine.purdon@uwaterloo.ca

What do we really know about obsessive-compulsive disorder, and about compulsions in particular? How many times are compulsions repeated within an episode and what is the

degree of inter-episode variance? What, exactly, is the goal of the compulsion (e.g., to achieve certainty, to achieve satisfaction, to get rid of the obsession, to reduce anxiety, to get the “right” feeling, to absolve oneself of responsibility for harm)? How often are compulsions successful in achieving this goal and what factors vary goal attainment? Recent research on the phenomenology and persistence of compulsions will be presented and clinical implications discussed. It is clear that there is much to be gained from developing a better understanding of compulsions.

LECTURE

SATURDAY, MAY 27th

17.00 - 17.30

AMELIA GANGEMI

Strategies in reasoning in patients with psychological illnesses

University of Messina, School of Cognitive Psychotherapy - Istituto Gabriele Buccola (IGB), Palermo, Italy

Contact: amelia.gangemi@unime.it

The hyper-emotion theory postulates that psychological illnesses are disorders in which individuals have negative emotions that are appropriate to the situation but inappropriate in their intensity. When these individuals have such an experience, they are bound to reason about its cause. Patients thus develop characteristic strategies of reasoning that depend on the hyper-emotion elicited by a threat. In anxiety disorders (e.g., panic attack, social phobia), the perception of a threat leads to hyper anxiety, and the reasoning is corroboratory, adducing only evidence that confirms the risk (corroboratory strategy). In Obsessive Compulsive Disorders, the perception of a threat leads to hyper guilt, and the reasoning is dialectical, adducing both evidence confirming and disconfirming the risk (dialectical strategy). In this paper, some studies which corroborate this hypothesis will be discussed, together with their clinical implications.

ORAL PRESENTATIONS
FRIDAY, MAY 26th

9.00 - 10.15

Chair: *Maurizio Brasini*

9.00 - Does rumination effect the frequency and associated distress of personally relevant, intrusive thoughts? An experimental study in an analogue student sample

KARINA W., ASLLANAJ B., LENZ M., LIEB R.

Clinical Psychology and Epidemiology, University of Basel, Switzerland

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The role of depressive rumination in obsessive-compulsive disorder remains unclear to date and there is a lack of experimental studies addressing this question. The aim of this study is to examine the imminent effects of rumination on personally relevant intrusive thoughts and on depressive mood in an experimental study with an analogue student sample. Following an activation of personally intrusive thoughts, N = 75 healthy individuals were asked to monitor the frequency of their intrusive thoughts, associated distress, urge to neutralize and depressed mood before and after an experimental manipulation (random allocation). During the experimental phase, they were instructed to either think about the intrusive thoughts in a repetitive, unproductive way ('rumination about intrusive thoughts'), to think about potentially dysphoric characteristics in a repetitive, unproductive way ('dysphoric rumination') or to think about neutral events and objects ('distraction'). Frequency of thoughts was measured with a counter app, accompanying distress, urge to neutralize and depressed mood on appraisal ratings (1-10). Contrary to expectations, no significant differences were found between groups for frequency of thoughts, distress, urge to neutralize and depressive mood. Manipulation checks demonstrated that rumination (in both conditions) and distraction were successfully induced. Results and methodological questions are discussed in the context of current theories of OCD, rumination and the appropriateness of analogue samples.

9.15 - Internet-based attentional bias modification training as add-on to regular treatment in alcohol and cannabis dependent outpatients

HEITMANN J., VAN HEMEL M., OSTAFIN B., DE FUENTES-MERILLAS L., FLEDDERUS M., MARKUS W., WIERS R., MACLEOD C., DE JONG P.

University of Groningen, The Netherlands

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The tendency to attend to and focus on substance-related cues in the environment (i.e., attentional bias) has been found to contribute to the persistence of addiction. This attentional bias can be modified with computerized attentional bias modification (ABM) tasks. Modifying attentional bias might positively contribute to treatment outcome and the reduction of relapse rates in addiction. However, the successful modification of attentional bias has often not resulted in clinically meaningful changes of symptoms.

This might be due to the context in which they are performed, the static characteristics, and the intensity of these trainings.

Our currently running multi-centre RCT (recruitment April 2016 until May 2017) investigates the effectiveness and cost-efficacy of a new developed ABM intervention. This intervention is a dynamic home-delivered multi-session online training, and is provided as an add-on to treatment as usual (TAU), cognitive behavioural therapy (CBT). Participants are outpatients diagnosed with alcohol or cannabis dependency. They are randomly assigned to one of the following three conditions: TAU + iABM; TAU + placebo training; TAU-only. There is a pre- and a post-measurement as well as a 6 and 12 months follow-up. This RCT is the first to investigate the effectiveness of an add-on internet-based ABM intervention in reducing relapse rates in alcohol and cannabis dependency. If proven effective, this ABM intervention can be easily implemented as a home-delivered component of current CBT. In this contribution I will present the design of the study, illustrate and explain the ABM intervention, and address the latest developments of the study.

9.30 - The longitudinal effects of repetitive tDCS on cigarette consumption: An EMA and EEG study

VERVEER I., VAN DER VEEN F., REMMERSWAAL D., FRANKEN I.

University of Rotterdam, The Netherlands

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Tobacco use leads to the largest number of preventable deaths world-wide and costs billions of dollars each year. Despite available treatments, tobacco users often fail to quit smoking. Promising new treatment interventions in nicotine addiction are non-invasive neurostimulation techniques, such as transcranial Direct Current Stimulation (tDCS).

In previous studies, bilateral tDCS over the DLPFC was found to decrease (cue-induced) craving and smoking in nicotine addiction. Further research is needed to study the effect of tDCS on actual cigarette consumption, the duration of this effect, and the working mechanism behind it. Therefore, the current study explores the longitudinal effects of repetitive tDCS over the DLPFC on mean number of smoked cigarettes a day.

Sixty smokers will receive three twice-daily tDCS sessions (real or sham) in one week. To measure the working mechanism behind the effects of tDCS, behavioural and electrophysiological measures of inhibitory control and risky decision making are measured before and after the intervention week, and at three months follow-up. In addition, Ecological Momentary Assessment (EMA) is used to measure cigarette consumption and craving. The use of EMA may enhance the reliability, because laboratory settings often lack a daily-life resemblance, or trigger retrospective recall biases.

It is expected that repetitive tDCS is related to less craving and cigarette consumption right after the intervention week and at three months follow-up as compared to baseline (the week before tDCS). We hypothesize that this will be associated with enhanced inhibitory control and less risky decision-making as measured by both behavioural and electrophysiological measures.

9.45 - The influence of yoga on (chronic) depression and potential cognitive mediators

VOLLBEHR G., OSTAFIN B., BARTELS-VELTHUIS A., HOENDERS R.

Center for Integrative Psychiatry, Lentis Mental Health Care, Groningen, the Netherlands

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Introduction: Although mindful yoga has shown promise as a mood disorder intervention, there is little know about the mechanisms through which the intervention works. The present studies examine whether mindful yoga reduces symptoms of depression and whether cognitive variables show promise as potential mediators. Study 1 method: 65 undergraduates with current depressed affect were assigned to a 30-minute mindful yoga or a relaxation intervention (+8 days of home practice). Self-report measures were used to assess depression and rumination. Assessments occurred at baseline, post-intervention, and 2-months follow-up. Results: At post-intervention, there were no significant differences between conditions on the depression or mediator variables. At follow up, compared to the relaxation group, the mindful yoga group reported less depressive affect. Regression analyses indicated no mediation effect of rumination. Study 2 method: A pilot study on the effects of a 9-week manualized mindful yoga intervention in a group of 12 patients with chronic mood disorders. Self-report measures were used to assess depression, worry, rumination, and fear of negative emotion. Assessments occurred at baseline, post-treatment and 4-month follow-up. Results: Depression decreased at post-treatment and at 4-month follow-up. Regarding potential mediators, there was evidence for increased acceptance of negative emotions, decreased worry, but no evidence for decreased rumination. Change in depression showed small-to-medium correlations with change in acceptance of emotion, rumination, and worry. Conclusion: In sum, this research provides evidence for mindful yoga as an intervention and suggests that worry and acceptance of emotion may hold more promise as mediators than does rumination.

10.00 - The association between 5HTT polymorphisms, Neuroticism and Avoidance Coping in elite athletes

PETITO A., ALTAMURA M., IUSO S., PADALINO F.A., SESSA F., D'ANDREA G., MARGAGLIONE M., BELLOMO A.

University of Foggia, Italy

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Many stressors within the competition environment can create tension and tax the ability of elite athletes to cope with them. Coping refers to a variety of cognitive and behavioral strategies individuals use to manage specific external and/or internal stressors. In addition some personality traits such as neuroticism, defined as proneness to negative emotionality, could be as risk factor for anxiety and depression in sport-related stressful situations. Numerous studies reported an association between a polymorphism in the serotonin transporter gene (5HTT-LPR), the personality trait of neuroticism and the strategies people use to cope with stress. Therefore, any association between 5HTT-LPR genotype and avoidance coping may be entirely mediated by trait neuroticism, or may be only partially mediated. The purpose of this study was to determine the relationship between serotonin transporter polymorphisms, neuroticism,

and avoidance coping in elite athletes during championship. One hundred and thirty-three (133) elite athletes completed the NEO Five-Factor Inventory (NEO-FFI). Coping style were assessed using the Coping Orientation to the Problems Experienced (COPE) inventory. A polymerase chain reaction was employed to identify genotypes at the 5HTT-LPR polymorphism. Higher levels of neuroticism were associated with more avoidance coping strategies. The 5HTT-LPR s/s genotype was associated with both neuroticism ($p < 0.001$) and avoidance coping strategies (disengagement, substance abuse) ($p = 0.09$). The results suggest that neuroticism mediates the association between 5HTT-LPR genotype and avoidance coping in athletes. Identification of homogeneous groups of athletes having predispositions to therapeutic interventions on awareness and on changing dysfunctional coping may help to implement early prevention programs.

SYMPOSIUM

FRIDAY, MAY 26th

11.15 - 12.15

Chair: *Ela Oren*

Cognitive Mechanisms of Obsessive Compulsive Disorder

The purpose of the proposed symposium is to present several recent empirical studies in the field of Obsessive Compulsive Disorder (OCD), aimed to deepen the understanding of different cognitive mechanisms underlying core elements of the disorder. Results from these studies will be presented and discussed with regard to how they inform current models of OCD pathogenesis and how findings can be translated to intervention as a part of existing treatment protocols for OCD.

11.15 - Attenuated Sense of Agency and Obsessive Compulsive Tendencies

OREN E., DAR R.

School of Psychological Sciences, Tel Aviv University, Israel

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The sense of agency (SoA), defined as "the registration that I am the initiator of my actions", depends on the integration of external cues with internal cues of proprioception, movement and interoception. This study aimed to test the hypothesis that as obsessive compulsive (OC) individuals are characterized by attenuated access to internal states, they would experience reduced SoA. To test this hypothesis, we used the Intentional Binding task, an implicit measure of the SoA. Using this task, previous studies have shown that voluntary actions are perceived as occurring later than they actually do, while the effects of those actions are perceived as occurring earlier than they do. We predicted that this difference in perception (i.e., the Intentional Binding effect) would be relatively small for OC individuals.

Participants high and low in OC tendencies completed the Intentional Binding task, in which they were asked to make temporal judgments of auditory effects in two conditions: passive and active. The Intentional Binding effect of each OC group (high vs. low) was calculated as the difference in the average judgment error between the active and the passive condition.

In accordance with our predictions, the Intentional Binding effect of high OC participants was smaller than that of the low OC participants, indicating that they experienced lower levels of SoA in the active condition. These findings may have important implications for the understanding and treatment of obsessive compulsive disorder (OCD).

11.30 - Proprioception, Movement and Obsessive Compulsive Tendencies

EZRATI O., FRIEDMAN J.

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The Seeking Proxies for Internal States (SPIS) model suggests that obsessive-compulsive disorder (OCD) is related to attenuation of internal states and that as a result, obsessive-compulsive (OC) individuals seek external feedback (proxies) to compensate for this attenuation. Previous research has supported this model in the domain of bodily states such as muscle tension and relaxation. The present study aimed to further explore the attenuation of internal states in OC individuals, specifically in body movement and proprioception.

The performance of accurate hand movements demands the integration of different types of cues; internal proprioceptive information from receptors in the muscles, joints and skin, and external visual feedback. Following The SPIS model, we predicted that compared to individuals with low OC tendencies, individuals high on OC tendencies will rely more on visual feedback as an external proxy and less on internal proprioceptive information when performing exact movements. Therefore, their performance should be more affected by the absence of the visual information. Following the same line of thought, we expected that supplying false feedback will have a larger effect on the performance of high OC individuals, as compared to people with low OC tendencies.

To test these assumptions we used a point-to-point hand movement task with three feedback conditions: (1) A full feedback condition, with valid feedback on hand location; (2) A false feedback condition with distorted visual feedback on hand location; (3) A no-feedback condition. Preliminary results show that high OC individuals, as compared to low OC individuals, were more affected by false external feedback in the performance exact movements.

11.45 - Making social judgements based on one's own emotional reaction versus external information in individuals with high versus low obsessive-compulsive tendencies

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The Seeking Proxies for Internal States (SPIS) model of obsessive-compulsive disorder (OCD) suggests that OC individuals show an attenuation of internal states and must therefore seek external feedback (proxies) to compensate for this attenuation. The model predictions have been well supported for bodily states. Only one recent series of studies directly investigated accessibility of emotional states in relation to OC symptoms and showed an association between reduced access to emotional states and OC

symptoms. To further expand this line of research, the current study aimed to test the prediction that when asked to make judgements about social stimuli, OC individuals would be less able to access and rely on their own emotional response but instead seek external information.

High and low OC participants evaluated human faces taken from a standardized database on common personality traits (e.g., likability). Each face was accompanied by (false) feedback about the “majority-rating” of this face. Half of the participants were instructed to base their rating on their own emotional response while the other half were asked to simply rate each person's character based on their face.

Preliminary analyses ($n = 37$) show that high vs. low OC participants differ in both ratings and reaction times only when instructed to rely on their personal emotional response. These first results seem to provide additional support for the SPIS model in the domain of emotions. Further results and implications will be discussed.

12.00 - Explicit Instructions Facilitate Performance of OCD Participants but Impair Performance of non-OCD Participants on the Serial Reaction Time Task

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The study examined the hypothesis that individuals with OCD have strategic preference toward controlled processing, which takes over and interferes with implicit-automatic processing.

Twenty-four participants with OCD and 24 non-clinical control (NC) participants group-matched for gender, age and years of education performed an implicit learning task (serial reaction-time task; SRTT), in which they were required to press keys spatially corresponding to the location of a single target stimulus that successively appear at one of four locations according to an underlying sequence. In order to facilitate explicit learning, we informed half of the participants in each group that the target stimulus location was determined by an underlying sequence, and instructed them to try to figure out that sequence. The other half of the participants was not informed of the existence of the underlying sequence, and therefore was expected to learn the sequence implicitly.

Significant learning was found at all conditions, indicating that all participant were able to learn the task under both sets of instructions. However, there was also a significant interaction between group and instructions, so that explicit learning instructions facilitated the performance of OCD participants, but impaired the performance of NC. Our results indicate different preferred information processing modes in individuals with OCD in comparison to NC. These results suggest that OCD is associated with a tendency for controlled processing to take over and interfere with automatic processing.

12.15 - 13.00

1. The role of craving and maladaptive personality traits in adolescent gambling

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Although the gambling disorder criteria do not explicitly address craving, craving has received increased attention as a critical phenomenon in gambling addiction, since it was found to be a significant predictor of gambling severity and might help explain why some gamblers continue to gamble despite adverse consequences. Furthermore, recent findings have suggested that both alcohol consumption and maladaptive personality dimensions may serve as risk factors among adult pathological gamblers. To date no study analyzed the relative contribution of these factors in adolescent gambling behavior.

This study aims to investigate the relationship between gambling severity, craving, maladaptive personality traits, and alcohol use in adolescence.

The sample comprised 430 high school students (47.9% males), aged between 14 and 18. Participants were administered the South Oaks Gambling Screen-Revised for Adolescents (SOGS-RA), the Gambling Craving Scale (GACS), the Personality Inventory for DSM-5 - Brief Format (PID-5-BF), and the Alcohol Use Disorders Identification Test (AUDIT).

Data were submitted to univariate and mixed ANOVAs, and linear regression analysis.

Results indicated that, relative to both non-gamblers and nonproblem gamblers, at-risk and problem gamblers scored significantly higher on the GACS and the PID-5-BF dimensions, as well as on the AUDIT total scores. Regression analysis showed that, along with gender and age, the best predictors of adolescent gambling involvement were the Anticipation and Desire GACS subscales, the Negative Affectivity PID-5-BF dimension, and the AUDIT total score.

This finding provides the first evidence of an association among problematic gambling, craving, alcohol consumption, and maladaptive personality trait dimensions in adolescence.

2. Mediation of interpretative bias between self-schema consolidation and depressive symptoms

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Two research lines inspired by the cognitive theory to depression, one regarding the content characteristics of self-schemas and the other concerning cognitive biases, have been largely conducted in parallel. The structural aspects of self-schemas (the level of interconnectedness among self-descriptors) have only recently become the focus of research attention, while a potential mediating role of cognitive processes linking the structural aspects of schemas and depressive symptoms has not been investigated so far.

65 undergraduate students completed: the Psychological Distance Scaling Task (PDST), a measure of self-schema structure, the Serbian Scrambled Sentences Test (SSST), a measure of depressive interpretative bias, and the Beck Depression Inventory-II (BDI-II). Mediation of interpretative bias (SSST) between the indicators of consolidation of different aspects of self-schema (PDST) and depressive symptoms (BDI-II) was calculated using the PROCESS macro. Results suggested interpretative bias was a total mediator in the relation between both positive and negative interpersonal aspects of self-schemas and depressive symptoms, while acted as a partial mediator regarding positive and negative achievement domains. Reverse mediation was also significant, suggesting a possible reciprocal relation between the symptoms and bias.

This study supports the notion that more consolidated negative, and less interconnected positive domains of self-schemas can be responsible for depressive symptoms, at least in a nonclinical population. This may be through biased processing because in ambiguous situations negative content can be extracted more easily. Future studies should employ prospective designs and clinical samples. Therapeutic work targeting the structural aspects of self-schemas may be essential in alleviating depression.

3. I'm not fat, I'm pregnant! A study on body image, dissatisfaction body and pregnancy

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The gestation period implies a change in the aesthetic ideal. Many studies argue that women accept the change in specific body parts because they receive positive feedbacks from society. This study examined body image, dissatisfaction body and psychological characteristics in 60 women (age $M=29,7$; $ds=4,49$: 30 non-pregnant and 30 pregnant women, equally divided into the 3 trimesters of pregnancy). Participants filled in paper-and-pencil tests for self-esteem, characteristics of eating disorders and body dissatisfaction. Furthermore, they were required to complete a task evaluating body dis/perception bias. Finally, they were weighed. Results evidence that pregnant and non-pregnant women show cognitive distortions (facilitation and disengagement bias). Furthermore, pregnant women are less dissatisfied with proper body. Furthermore, although increasing BMI, pregnant women perceive their parts of the body less negative than control group, even for parts that considerably increase in volume during gestation like as the belly, stomach and hips. Pregnancy results as a protective factor for body dissatisfaction and body misperception, maybe because it plays an important social role and is characterized by a temporary suspension of normal Western standards of beauty based on slimness. Literature underlines that in gestation period, physical, mental and emotional alterations, are seen as temporary and crucial for their child's growth. Further studies should investigate the body image and dissatisfaction in the post-pregnancy period.

4. Global Self-Esteem and Self-Concept Clarity: Potential mechanisms underlying self-schema effects on depression and anxiety symptoms

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Structural aspects of self-schemas are found to be linked to depression and anxiety symptoms, but there is little evidence of mechanisms through which they lead to development and maintenance of depression and anxiety. The aim of this study was to explore if the relations between self-schema organisation, on one hand, and depression and anxiety symptoms, on the other, are mediated through global self-esteem (GSE) and self-concept clarity (SCC).

The study involving 164 students had three phases separated by two weeks. Students completed the Psychological Distances Scaling Task as a measure of self-schema organisation of positively and negatively valenced interpersonal and achievement content (phase I). Self-reported measures of GSE and SCC were completed at phase II whereas the scores of depression and anxiety were registered at phase III.

Results from mediation analyses showed that high interconnectedness of positively valenced achievement and interpersonal content exerts negative effects on depression symptoms by heightening GSE. High interconnectedness of negatively valenced achievement and negatively valenced interpersonal content exerts positive effect on symptoms of depression through lowering GSE and SCC (respectively). Regarding anxiety symptoms, only achievement content (both positive and negative) proved to be important with its effects mediated only by SCC.

These preliminary results provide a sound base for future research about differential pathways through which both positively and negatively valenced self-referent schema contents lead to depression and anxiety symptoms. In future studies, with longer periods between measurement occasions, history of mental disorder and negative life events should be taken into account.

5. Relation between paranoid and dysphoria symptoms in context of self-esteem: network approach

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Close relation between paranoia and depression has been assumed by some theories and some research. Also, it is proposed that self-esteem is important in this relation. The aim of this study was to explore differences in network structures which include both paranoid and dysphoric symptoms in people with low and high self-esteem (LSE and HSE).

In this study, 164 participants ($M = 20.93$, $SD = 1.98$) filled the following self-report questionnaires: the Fenigstein Paranoia Scale, the Depression subscale of the Depression, Anxiety and Stress scale and the Rosenberg Self-Esteem Scale. Participants were allocated into two groups. HSE group represented people with an above average score on the aforementioned scale, and LSE with a below average score. Association and concentration networks were plotted for both groups.

In the HSE group symptoms of paranoia were better clustered, with fewer central symptoms, whilst clusters of depressive symptoms were weakly connected and more distant to paranoia symptoms. In the LSE group symptoms of depression seem to be more

integrated and clustered than symptoms of paranoia. Also, symptoms of paranoia were less clearly clustered, but better connected with symptoms of depression. Moreover, different groups have different bridge symptoms connecting the two clusters.

Results could suggest that the greater density of paranoia symptoms keep dysphoric symptoms sequestered, acting as a defense mechanism from depression and low self-esteem. In LSE groups, it seems that this mechanism does not work, and depressive symptoms seem to be more easily activated by each other and more easily trigger sensitive interpretations as well.

6. Do too many safety measures actually increase fear? Threat perception towards conditioned safe stimuli is increased following avoidance

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Excessive and irrational avoidance behavior is a hallmark of anxiety disorders. Previous research has shown that avoidance behavior can increase threat expectancy towards a neutral stimulus when avoidance behavior is no longer possible. Here, we conducted a laboratory-based study to test whether threat expectancy could also be increased towards a stimulus that was conditioned to be 'safe'. Healthy participants were randomly assigned to either the experimental or control group. First, all participants were fear conditioned to one danger cue (CS+; A) and two safe cue (CS-s; B and C). Then, they underwent avoidance conditioning, where they could prevent shock during A if they made an avoidance response. The experimental group then learned to also engage in avoidance during C, while avoidance was not possible for the control group. During the test phase, both groups received all stimuli without the opportunity to avoid. Avoidance behavior, threat expectancy, fear potentiated startle and skin conductance responses were measured throughout. Preliminary results show that shock expectancy was significantly higher for C in the experimental group than in the control group throughout the entire test phase, indicating that avoidance behavior can increase and maintain threat appraisal to stimuli that were previously regarded as safe. This study highlights that excessive avoidance behavior can insulate people from the objectively safe functions of stimuli and may lead to enhanced anxiety.

7. A Comparison of Obsessive-Compulsive Disorder scales

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Few studies have investigated the converge validity of measures administered to patient with obsessive-compulsive symptoms. Nevertheless, to our acknowledgements, no data reporting converge validity across multiple measures in patients with the diagnosis of Obsessive Compulsive Disorder (OCD). For this reason, the aim of the study was to investigate the correlation between four report measures in patients with OCD. The administered tests include the Symptom Checklist-90-Revision (SCL-90-R), the Minnesota Multiphasic Personality Inventory (MMPI-I), the Yale-Brown Obsessive Compulsive Scale checklist (YBOCS-CL) and the Padua Inventory (PI-R). Subjective symptoms and clinical

interviews were performed together with the evaluation of these tests in 121 patients with OCD. As a control group, we selected 1) a group of depressed patients (N=23) and 2) a group of patients with anxiety disorders (N=54) that undergone the same clinical interviews. The results indicate significant correlations in OCD patients between i) two selected subscales of the MMPI (in particular the PT and SC subscales) and those obtained from the SCL-90 (obsessive-compulsive symptoms and psychoticism); ii) between both the PT subscale of MMPI and the obsessive compulsive scale of the SCL-90 with the total score of the PI-R; iii) between the same two subscales and the total score of the YBOCS-CL. These results suggest that the selected reports administered to OCD patients show a robust convergent validity and that prescreening of OCD symptomatology through report measures could represent a suitable tool in clinical practise for a diagnosis of OCD.

8. Parkinson Disease: A study on shame and cognitive reappraisal

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Emotions, if well regulated, can help individual well-being (Gross, 2002). This study was mainly based on the emotion of shame in Parkinson population and on the ability to regulate it. With this aim we compared participants with Parkinson to those with Multiple Sclerosis and to those with any neurological disease. At the best of our knowledge, until today, no study investigated it, even though shame is a very often experienced emotion in such neurological population. In order to check whether results could be shame- or emotions- related, we investigated also the emotion of anger. Therefore, in the present study, 20 participants per each group were matched for age and sex. They were asked to see a picture on the center of the screen with a neutral or negative sentence reported under it, and then to refer their levels of shame and anger, by using a 7-points likert scale. In half of the trials used, they had to apply the cognitive reappraisal of taking mental distance from the situation (distancing) or no strategy. Results showed that Parkinson group is the one more affected by the experiences of shame and anger, and is the only one able to regulate shame, showing the success of its application. These findings provide insights on the specific role of this regulatory strategy into neurological populations, and therefore they have interesting implications for psychotherapy, as suggesting the effects on using this strategy.

9. Imagery with rescripting with patients with Obsessive-Compulsive Disorder and other Axis I disorders: an observational study

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Imagery with rescripting (IwR) is an experiential-treatment technique, which has gained increasing attention over the last years. It is used to change the meaning of emotionally distressing memories, turning aversive mental images into positive ones, and achieving a healthier prospective on the event. In a typical exercise with a negative memory, an

image of the child is changed by introducing a helping figure who fulfills his/her needs (i.e., protection, acceptance). IwR is particularly used in emotion-focused and in Schema Therapy (ST) and can be used to treat several psychological disorders, such as obsessive-compulsive (OCD), major depression (MD) and personality disorders. The aim of this study was to compare IwR exercises applied to patients with OCD and other disorders, and to explore differences in patients' early experiences, suggesting that particular memories could be specific to OCD.

Forty-six exercises were collected in a sample of outpatients diagnosed with OCD (n=28; mean-age(SD)=33.0(9.1)years;14males) and other disorders (n=18; mean-age(SD)=32.0(8.4)years;2males; mainly MD). IwR exercises were categorized according to their content, emotions, needs, type of rescripting, and cognitive re-attribution. Descriptive and X^2 statistics were used to compare OCD and non-OCD groups.

Results showed that OCD patients reported significantly more blame/reproach and guilt-inducing memories, expressing more guilt and shame emotions, and reporting needs related to acceptance and spontaneity, compared to the non-OCD group. Conversely, no significant difference was observed in terms of type of rescripting, with both groups showing high protection, reassurance and expressing needs/emotions interventions. Within the final phase after IwR, OCD patients reported more frequent "I am not guilty" and "It's ok to express needs/emotions" cognitive re-attributions (vs non-OCD).

To conclude, OCD patients are more characterized by guilt-inducing memories and feelings. These data are in line with the most influential cognitive models on OCD (Mancini 2016; Salkovkis1999) that conceive guilt as a core emotion in the onset/maintenance of this disorder.

10. Schema Therapy Model applied to depressed individuals

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Schema Therapy has been applied to several Axis I and II disorders. Renner (2012) validated a Schema model for depression suggesting that specific maladaptive schemas (failure, emotional deprivation, and abandonment) and modes (demanding parent) are crucial in the disorder. The aim of this study was to further corroborate Renner's model. One-hundred individuals from normal population were recruited through an online survey. Self-report measures were administered to assess for depression (*Centre for Epidemiological Studies-Depression Scale*; CES-D), schemas, modes, coping styles, and some psychological variables. Descriptive, correlation, t-tests and multiple regression analyses were performed.

The sample was splitted into two sub-groups according to subjects' low [mean age(SD)=40.93(13.94); F64%] vs high [mean age(SD)=31,24(9,75); F61%; CES-D>30] score on the CES-D. Overall, depressed individuals were younger and had significantly more interpersonal and emotional-regulation problems compared against the non-depressed group. Significant differences between groups were observed for all schemas, dysfunctional modes and avoidant coping strategies, with depressed subjects scoring significantly higher. Afterwards we investigated schemas and modes within the depressed sample. Significant positive correlations were detected between depression severity and abandonment, abuse, emotional deprivation, social isolation, defectiveness/shame, vulnerability to harm, self-sacrifice, grandiosity and high standards schemas. Further significant associations were observed for dysfunctional

modes and avoidant coping strategies. Finally, specific regression models showed that, high standards, subjugation and grandiosity schemas, the demanding parent mode, and dissociation the best-predicted depression severity. Despite in our study we recruited a non-clinical sample, our results further corroborate Renner's schema model on depression.

11. Schema Therapy Model applied to depressed individuals

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Disgust is considered the guardian of borders of both bodily and social self. As "body and soul emotion", disgust has an unequivocally close relationship with body which it protects distancing any potentially toxic object, event or situation through rejection. Embodiment, which consists in incorporating something within our bodily borders, is a process working in the diametrically opposite way. This means that disgust could prevent or affect the process of embodiment.

The aim of present study is to investigate how disgust affects embodiment. For this doing we used the Rubber Hand Illusion (RHI)- i.e., a subject's illusion of the self-ownership of a rubber hand touched synchronously with its own hand. To assess disgust's effect on embodiment, we induced RHI in 13 subjects (aged 20-40 yrs) using "morally" and "physically" contaminated rubber hands, together with the classical rubber hand. Furthermore, since the close relation between disgust and obsessive compulsive disorder (OCD), we assessed the role of both disgust sensitivity and the obsessive subclinical traits in the modulation of RHI's indices (i.e., RHI questionnaire score and proprioceptive drift), subjects were requested to fill out the Disgust Scale Revised, the Obsessive Compulsive Inventory Revised and the Guilt Inventory. We observed 1) a significantly different proprioceptive drift between classic RHI and contaminated RHI and 2) a correlation between psychological variables and the magnitude of illusion (as indexed by both questionnaire and proprioceptive drift). Our results pave the way for proposing RHI as therapeutic tool in OCD.

12. The Principle Of Fear Proportionality And Its Impairment In Anxiety Disorders

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Excessive fear generalization is a disabling characteristic of pathological anxiety, but little is known about underlying mechanisms. Here, we used a newly developed fear conditioning procedure to study the development of disproportional fear to isolated reminder cues of traumatic events. Fear is proportional when it tracks the ratio of the number of trauma cues currently present to the total number of trauma cues. We have previously established this principle of fear proportionality in healthy individuals, using the one-trial overshadowing procedure that was initially developed in animal conditioning. Here, we replicated the fear proportionality in healthy individuals, but observed that a mixed sample of anxiety patients displayed disproportional levels of threat-expectancy to isolated cues following an aversive conditioning experience. Fear

proportionality also correlated with levels of trait anxiety in an extended sample that also included non-clinical anxious individuals and non-anxious clinical individuals. In line with the Research Domain Criteria initiative, we validated fear proportionality as a dimensional mediating process that supports adaptive fear responding in healthy subjects and is linked to pathological anxiety when it is disrupted.

13. Implicit measures and Psychopathy: A review

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Self reports and interviews are the most common methods for measuring psychopathology. However, they both have many limitations. Self reports assume individuals are aware and able to retrieve their personal issues. Interviews primarily rest on the assumption that the interviewer can reliably rate the patient. Moreover, social desirability might interfere with the process of measurement. In order to overcome the limitations of explicit measures, a wide branch of research in personality and social psychology refers to implicit measures of psychological constructs. Probably the most widely used among these implicit methods is the Implicit Association Test (IAT). The IAT is a measure that focuses on reaction times to determine the relative strength of associations between the self-concept and an attribute, i.e. the explicit category that corresponds to the topic explored (e.g., racism, stereotypes, shame, anxiety, self esteem, etc.). Recently, implicit measures have been introduced in Psychopathology research, contributing to the knowledge about both explicit and implicit perceptions of self in psychological disorders. In general, research shows that implicit measures correlate with deviant behaviors, while explicit measures are uncorrelated with behavioral criteria. Being able to collect this kind of information might be interesting from a clinical perspective, especially when dealing with severe disorders, like psychopathy. This work aims to review recent developments of the literature on IAT and psychopathy, in order to shed some light on the criminal mind.

14. Transgenerational effects of maternal environmental enrichment on stress responses of offspring

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Recent evidence suggests that through multiple and complex mechanisms like environmental continuity, special maternal care and epigenetic changes, parental life experiences can influence neuronal and behavioral development of the offspring. Some influences could begin already in the pre-reproductive phase acting as vulnerability/resiliency factors for future development. In this study we assessed the response to a chronic stress, as social isolation of male offspring from female Wistar rats exposed to a pre-reproductive environmental enrichment protocol.

By using a stereological analysis we examined the eventual changes in the expression of glucocorticoid receptors (GRs), in dorsal hippocampus and in amygdala, structures closely implicated in hypothalamo-pituitary-adrenocortical axis (HPA) regulation.

The results showed an increased number of immunopositive cells for GRs both in amygdala and in hippocampus in the rats exposed to chronic social isolation in comparison to controls reared in standard conditions. EE exposure of mums seems exacerbate the difference between isolated vs. control groups. Namely, in the amygdala the offspring of enriched mothers exhibited overall a higher GRs expression in comparison to controls.

These results indicate a transgenerational effects of pre- reproductive maternal enrichment on offspring stress system regarding activation (amygdala) and fine mechanisms of feedback and homeostatic regulation (hippocampus).

The transgenerational effects of maternal pre-reproductive EE appears to foster functional plasticity of the stress system to efficiently meet ongoing environmental demands.

15. The relationship between Harm Avoidance, 5HTT polymorphisms, and Emotional Arousal Control in male elite athletes

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Genetic polymorphism of the promotor zone of the gene of serotonin transporter (5HTT) is related to adaptive ability of humans, along with ability of conducting emotional control. The promoter region of the SLC6A4 gene contains a polymorphism with short (s) and long (l) repeats in a region: 5-HTT-linked polymorphic region (5-HTTLPR). Findings suggest that the 5HTT genetic polymorphism may be associated with harm avoidance (HA) scores; however, the effect is influenced by ethnicity and gender. The effects of anxiety on athletic performance have been the main target of study in sports psychology recently. The purpose of this study was to determine the relationship between harm avoidance, serotonin transporter (5HTT) polymorphisms and emotional control in elite athletes during championship. One hundred and thirty-three (133) elite athletes completed the Temperament and Character Inventory (TCI) Test. The mood states were assessed using the Profile of Mood States (POMS) questionnaire. The athlete's mental skills were assessed through the Sport Performance Psychological Inventory (IPPS-48). A polymerase chain reaction was employed to identify genotypes at the 5HTTLPR polymorphism. The 5HTTLPR s/s genotype was associated with both harm avoidance ($p=0.046$) and emotional arousal control ($p=0.002$). These results suggest a significant interaction between the 5HTTLPR polymorphism, harm avoidance and sport related stress that predict adverse important psychological component outcomes in athletes. Identification of homogeneous groups of athletes having predispositions to therapeutic interventions on awareness and on changing ineffective emotional arousal control may help to implement early prevention programs.

16. Why people ruminate? The role of goals in the rumination process

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While we know that rumination is an extremely relevant strategy for people, the role of goals into the rumination processes are yet unclear. Among the authors that have addressed this issue, Martin and Tesser proposed that rumination activates when the subject fails to progress toward personal goals. Similarly, Watkins has suggested that rumination develops when a goal is unachievable. Studies so far suggest that rumination is implicated in the process of achieving abstract goals, and particularly, rumination develops to facilitate the achievement of intermediate goals that are instrumental to reach higher-order and abstract goals. On the base of these observations, it has been tested the hypothesis that rumination would be activated when the failure at an irrelevant task compromise a personal high-order goal. Specifically, we assume that after a failure rumination would be reduced if we give a reassurance regard to high-order goal related to the failure. First, 42 participants completed some questionnaires: SRRS - Stress Reactive Rumination Scale; BDI II; Personal Striving Assessment (PSA). Successively, was selected a value from PSA that resulted common between participants. They were given a false information about the purpose of the experiment (e.g. Research demonstrated that people with creativity will have more success in the life. We will test this association). They were then given a list of anagrams impossible to solve, and given negative feedback on their performance. The sample were then randomly splitted into two groups: one received only the solution to the task, the other one received the solution and a reassurance about the high-order value (success in life). Rumination were tested after the solution/rassicuration and at the end of the experiment (State Rumination Questionnaire). Mood were measured at the beginning of the experiment, after the task and after the solution/rassicuration. Results demonstrated that the tendency to ruminate about a relevant value was partially reduced by reassurance. Moreover, participants with high tendency to ruminate and depressed state (State Rumination, SRRS, BDI) were focused principally on high-order value (success), instead on failure event. Results are discussed in line with theories about rumination.

17. Personality and memory bias in depression

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Blatt (1976) and Beck (1983) hypothesized the existence of two personality traits that make people vulnerable to different patterns of depressive symptoms, behaviors and cognitive biases. For instance, Blatt distinguished between an *anacletic* depression, that involves excessive interpersonal concerns, feelings of loneliness, weakness, helplessness and abandonment fears, and an *introjective* depression, that implies achievement concerns, and high levels of self-criticism. Even if in the last twenty years extensive research on Blatt's theory has been conducted, it has mainly involved subjective measures of personality traits, attachment styles, and depressive symptoms, leaving cognitive biases out. In this regard, a widely observed bias in depressed patients is *Overgeneral Memory* (Williams & Broadbent, 1986; McNally et al. 1994), defined as the tendency to report a categorical recall of the events due to scarce access to episodic

memories. Moreover, a somewhat opposite phenomenon has been observed too; in fact, depressed patients often report intrusive autobiographical images (Wheatley & Hackmann, 2011). The present study attempts to bridge the gap on cognitive biases in depression by shading light to this apparent incongruence. Specifically, on the base of Blatt's theory, it has been tested the hypothesis that overgeneral memories mainly related to experiences of failure are observed especially in *introjective* depressed subjects, whereas intrusive flashbacks related to past experiences of affective loss are observed in *anaclitic* depression. To investigate this hypothesis, 30 participants (normal and depressed) were required to recall autobiographical memories on the base of verbal cues belonging to three semantic categories (failure vs affective loss vs positive). By differentiating subjects on the base of Blatt's personality traits and depressive symptoms, results partially show the expected patterns, and are discussed in the light of theories and treatments of depression.

ORAL PRESENTATIONS

FRIDAY, MAY 26th

14.15 - 15.30

Chair: *Manuel Petrucci*

14.15 - Mechanisms of interplay between cognition and emotion during resting state

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Disrupted or impaired activation of internal (i.e. self-related thoughts)/external (i.e. environment perception through senses) focus orientation during resting state is considered to account for cognitive and, consequently, affective changes in depression. Throughout resting state subjects receive none or minimal external stimulation. Suggesting cognitive processes as predecessor of affect, neurocognitive investigations oppose the traditional perspective regarding diathesis-stress. Latter perspective emphasize the primacy of affective processes (in interaction with stressors) in the recurrence of depression (e.g. differential activation hypothesis). This study aimed at testing predictions from two theoretical accounts addressing the dynamic interplay of affect and cognition during resting state, specifically, the primacy of change in this interdependent process.

Using behavioral resting state paradigm, forty-nine subjects (81% female) rated the intensity and valence of mood and thoughts, and internal/external attention focus, during 40 minutes of rest. Half of participants were simultaneously exposed to musical mood induction. Prior to experimental procedure, vulnerability (ruminative thinking, cognitive reactivity, automatic thoughts) were assessed.

Latent profile analysis extracted 2-profile solution. First pattern showed large sudden decrease in positive and increase in negative affect, followed by negative thoughts and attenuated focus on self-related thoughts. Although this pattern appeared characteristic for non-induction group, it accounted for 70% of participants, who scored higher on vulnerability measures. Second profile showed small gradual decrease in positive mood, more variability in thought valence and stable oscillations between internal and external focus. Our results do not provide an unequivocal conclusion, but rather call for the inferences from an integrated theoretical framework.

14.30 - Looking the Audience in the Face: Relations with Social Anxiety and Public Speaking Anxiety

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Social Anxiety Disorder (SAD) is characterized by strong fear or anxiety about social situations in which one may be scrutinized by others. Avoidance of eye-contact has been mentioned as symptom, maintaining factor and possibly causal factor of SAD, but

empirical evidence for a relation is scarce. Some studies found that SAD-patients and people at risk for SAD looked less at faces in the audience during public speaking. The present study investigated the relation between gaze behavior and social anxiety in a community sample. Forty-seven females (ages 17-21) completed questionnaires on social anxiety and public speaking anxiety. A wearable eye-tracker was used to register gaze behavior in two conditions. In the speech condition, participants introduced themselves to a pre-recorded audience of nine members who behaved neutrally (1 min). In the viewing condition, they watched the same fragment of the recording without speaking. We measured the proportion of fixations on faces and the total fixation time on faces. Repeated measures analyses of variance with condition as within-subjects factor and social anxiety and public speaking anxiety as covariates showed that the effects of anxiety did not differ between conditions. Subsequent regression analyses showed a negative relation with the proportion of fixations on faces and total fixation time on faces for public speaking anxiety, but not for social anxiety. In a public speaking context, performance anxiety may be more relevant than (general) social anxiety. Taking into account individual fears of specific social situations may further clarify the relation between eye-contact avoidance and social anxiety.

14.45 - An examination of the role of goal-directed worry rules in pathological worry from a neural and autonomic perspective

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Excessive and uncontrollable worry is a defining feature of Generalized Anxiety Disorder, and an important research endeavor is to understand why some people are unable to stop worrying once started. Worry perseveration is associated with a tendency to deploy goal-directed worry rules (known as ‘as many as can’ rules; AMA). We review experimental research examining the role of AMA rules in pathological worry. We then present data from recent research using fMRI techniques to examine the association between the tendency to use AMA worry rules and neural and autonomic responses to a perseverative cognition induction in 19 participants with GAD and 21 control participants. To differentiate processes underlying AMA worry rule use from trait worry, we examined the relationship between scores on the Penn State Worry Questionnaire and neural and autonomic responses following the same induction. The tendency to adopt an AMA worry rule was positively associated with increased connectivity between right amygdala and locus coeruleus and increased connectivity between amygdala and rostral superior frontal gyrus. Higher PSWQ scores amplified decreases in functional connectivity between right amygdala and ventral and lateral frontal regions. We propose that the relationship between AMA worry rules and increased connectivity between the amygdala and prefrontal cortex represents attempts by high worriers to maintain arousal and distress levels in order to feel prepared for future threats. Furthermore, we suggest that neural mechanisms associated with the PSWQ represent effortful inhibitory control during worry. These findings provide unique information about the neurobiological processes that underpin worry perseveration.

15.00 - Social-Rank versus Affiliation Self-Evaluations in Social Anxiety

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Relying on cognitive and evolutionary models of social anxiety (SA), recent studies have shown that SA is characterized by greater erosion in explicit and implicit social-rank self-evaluations, as compared to explicit and implicit affiliation self-evaluations. The present study sought to examine social-rank versus affiliation self-evaluations in SA by employing an implicit measure which enables a direct comparison between the domains. Participants (N = 143) performed a valence-matched version of the Self Implicit Association Test, comparing associations of self with positive social-rank traits versus associations of self with positive affiliation traits. They also rated themselves explicitly on positive social-rank and affiliation traits, and completed measures of self-esteem, depression and SA severity. In line with our hypothesis, SA-severity was related to a propensity to hold lower explicit as well as implicit self-evaluations in the domain of social-rank versus affiliation, above and beyond the effects of gender, depression-severity, and self-esteem. These findings refine cognitive models of SA by documenting the link between SA and implicit self-evaluations, particularly in the domain of social-rank. Moreover, these data contribute to the understanding of positivity impairment in SA.

15.15 - Cognitive Bias Modification of Depressive Attributions

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Attributional style is thought to play a causal role in depression vulnerability, but there is limited research utilizing an experimental manipulation of attribution style. We report two studies in which we tested the effects of computer-based cognitive bias modification (CBM) procedures designed to alter attribution style. In both studies, students were randomly assigned to training conditions intended to encourage either a depressogenic or a positive attributional style. In Study 1, following training, participants' attributions for their failure on a challenging cognitive task were congruent with the training condition. Moreover, compared to participants in the positive training condition, those in the depressogenic condition reported more hopelessness and exhibited lower mood and self-esteem following the failure. In Study 2, dysphoric and non-dysphoric students were recruited. Participants made training congruent errors in recall of event attributions, by confabulating attributions that were consistent with their training condition. The training also affected negative mood and ruminative thinking. Among dysphoric, but not non-dysphoric participants, the training also affected negative mood and ruminative thinking following recall of an upsetting autobiographical memory. This work contributes to a growing body of research that examines CBM procedures that target main cognitive characteristics of depression.

16.30 - 17.15

Chair: *Edward Watkins*

Cognitive mechanisms governing depressive rumination

Rumination - the tendency to repeatedly focus attention to the causes and consequences of negative mood- is considered a key vulnerability factor for depression and a host of other psychological problems. This observation has generated a wealth of research into the mechanisms governing rumination using a wide variety of research methods. This symposium brings together a number of different approaches to study rumination in order to provide a more comprehensive understanding of this phenomenon. In this symposium we specifically focus on information-processing factors. Lin Fang will discuss research examining whether rumination is associated with a narrow attentional scope in a lab as well as a natural context using eyetracking methodology and ecological momentary assessment. Alvaro Sanchez will present a study using an innovative eyetracking procedure to retrain attentional bias to improve emotion regulation strategies. Ernst Koster will discuss research that uses cognitive control training to reduce rumination and depressive symptoms, Finally, Igor Marchetti will present a study examining the relation between attention and memory bias in relation to depressive symptoms and rumination.

16.30 - Eye-gaze contingent attention training (ECAT): Examining the causal role of attentional mechanisms in emotion regulation processes

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This study used a novel eye-gaze contingent attention training (ECAT) to test the prediction that attentional control mechanisms are involved in emotional regulation processes of reappraisal and rumination. Sixty-six undergraduates were randomly assigned to either the control or the active training condition of the ECAT, comprising an interpretation task. Participants in the active condition were instructed to allocate attention toward positive words to efficiently create positive interpretations (i.e., implementing attentional control) while they were provided with gaze-contingent feedback on their viewing behavior. Participants in the control condition freely generated emotional interpretations without receiving gaze-contingent feedback. Transfer to attention biases, reappraisal success and state rumination was evaluated using an engagement-disengagement task and an emotion regulation paradigm which were administered before and after the training. The training condition led to an implementation of attentional control and resulted in beneficial effects on the transfer tasks. Analyses supported serial indirect effects with larger attentional control implementation in the active ECAT leading: 1) to maximization of sustained attention on positive information, in turn predicting greater reappraisal success to down-regulate negative emotions, and 2) to larger reductions in state rumination after viewing

negative scenes. Our results highlight the importance of considering attentional control mechanisms in understanding (and treating impaired) emotion regulation processes. These findings provide an important step toward the use of personalized delivery of attention training to build resources of resilience and well-being.

16.45 - Specificity and overlap of attention and memory bias in depression

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Attentional and memory biases are viewed as crucial cognitive processes underlying symptoms of depression. However, it is still unclear whether these two biases are uniquely related to depression or whether they show substantial overlap. To address this issue, we investigated the degree of specificity and overlap of attentional bias and memory bias for negative stimuli in relation to depression across four published studies. By considering a pool of 463 healthy and subclinically depressed individuals, meta-analytic commonality analysis revealed that memory bias is reliably and strongly related to depression and, specifically, to symptoms of negative mood, worthlessness, and pessimism. Memory bias for negative information was minimally related to anxiety. Moreover, neither attentional bias nor the overlap between attentional and memory biases were significantly related to depression. In sum, our study showed that, across different paradigms and psychological measures, memory bias (and not attentional bias) represents a primary mechanism in depression.

17.00 - Cognitive control training for remitted depressed patients: Effects of a doubleblind RCT

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Cognitive control impairments have been identified as a risk factor for recurrent depression, placing individuals at increased risk for developing future depressive symptomatology by disrupting emotion regulation processes. Previous studies have shown that directly targeting cognitive control using a cognitive training approach may have beneficial effects in clinically depressed populations. Given that cognitive control impairments are known to predict future depressive symptomatology in RMD patients, we explored whether cognitive control training (CCT) can be used as an intervention to foster resilience to depression following remission.

We present a double-blind RCT study. 68 RMD patients were recruited and subjected to ten sessions of CCT (N=34) or a low cognitive load training (active control; N=34). At baseline, following two weeks of training, and at three months follow-up, cognitive transfer effects were assessed using a behavioral measure (cognitive task performance) and a self-report measure of cognitive functioning. Effects were explored on primary outcome measures brooding and depressive symptomatology. Secondary outcome measures included alternative measures for emotion regulation and residual symptomatology, along with self-reported quality of life, resilience, and disability. Both intention-to-treat and completers-only analyses were conducted.

Beneficial effects of CCT were found for cognitive task performance immediately following two weeks of training ($t = 4.78, p < .001$) and at three months follow-up ($t = 2.76, p = .007$). Furthermore, completers of the training reported a reduction in cognitive complaints at follow-up ($t = 2.72, p = .011$). Taking into account intention-to-treat, beneficial effects of CCT were found for both primary outcome measures, brooding and depressive symptomatology ($F_s > 4.69, p_s < .013$). Furthermore, CCT yielded positive effects on secondary outcome measures for maladaptive emotion regulation, residual symptomatology, and resilience ($F_s > 5.78, p_s < .006$). These findings indicate the clinical potential of CCT for remitted depressed patients, reducing cognitive vulnerability for depression and stimulating resilience.

17.15 - Testing the attentional scope model of rumination: from the laboratory to everyday life

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Rumination is considered a hallmark feature of depression but is also known to increase depression risk. Several cognitive theories have been proposed to explain why individuals have difficulty to inhibit ruminative thought. One recent cognitive model of rumination is the attentional scope model (Whitmer & Gotlib, 2013). In this model it is proposed that individuals with high levels of rumination have a more narrow scope of attention which is further decreased in negative mood states. We tested this proposal in two ways

In a first study we examined whether rumination is associated with a reduced visual attentional scope. For this purpose participants read sentences in a small, medium or no attentional window. Inferences about attentional scope can be made by eyetracking indices of performance in these three conditions. Moreover, we examined conceptual attentional scope by mapping the interplay between affect and thought using experience sampling methodology.

The data clearly indicated that individuals with high levels of rumination perform better in the small attentional window condition which is congruent with their attentional scope. There was a significant correlation between levels of rumination and performance in that condition; $r = .31$). Interestingly, the relation between affect and thought was more complicated where initial analyses suggested no linear correlation between rumination levels and momentary affect and thought. However, disruption in the link between affect and thought (higher levels of entropy) predicted depression scores at follow up ($p < .05$)

9.00 - 10.00

Chair: *Chiara Baglioni*

Sleep quality and psychopathology

Major depression disorder (MDD) is the leading cause of years of life lived with disability across all ages worldwide. Still, less than 50% of individuals with MDD show full remission with optimized first-line treatment. The Global Consortium for Depression Prevention recently stated that our best chance to combat the global pandemic of depression is to provide preventive interventions to people that are at risk. Disturbed sleep and insomnia represent the highest risk factors for MDD. As nowadays clinical and research interest in psychopathology focused on a better understanding of comorbidity, new theories highlight transdiagnostic and dimensional aspects of sleep disturbances. Increasing evidence shows that disturbed sleep worsens neural plasticity and memory formation, and, in turn, alterations of these processes may conduct to MDD and other mental disorders. This lead to new research deepening the relationship between sleep, emotions and mental health in general.

This symposium aims at integrating results from psychiatric, neurobiological and psychological research on sleep and mental health. Prof. Van Someren is a world-known expert on the relationship between sleep, insomnia and brain function. He was recently awarded by the European Research Council with the most prestigious ERC-Advanced Grant. Prof. Lombardo conducts pioneer research on the relationship between disturbed sleep, insomnia, eating disorders and emotion dysregulation. Finally, Prof. Baglioni's research focuses on insomnia and the role of sleep in mental disorders.

9.00 - Can't shake that feeling: fragmented sleep interferes with overnight dissolving of emotional distress

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Sleep researchers and clinicians may have developed anything between a slight bias up to a complete tunnel vision on the idea that sleep has only favourable effects on the brain, the body, cognition, mood, etc. But is it conceivable that at certain moments, under certain conditions, we'd better not sleep? Some exciting recent work suggests that sleep can have disadvantageous effects as well. Four clear examples can be mentioned. First, sleep occurring the 'wrong' time of day may interfere with the coordinated 24-hour profiles of gene expression (Archer, *J Sleep Res* 2015;24:476). Second, sleeping while the brainstem locus coeruleus is still active after a traumatic experience, can interfere with recovery (Vanderheyden, *Exp Brain Res* 2014;232:1575). Third, the fragmented sleep that is characteristic of people suffering from insomnia does not only interfere with the normal overnight resolving of distress after a negative emotional experience (Wassing, *PNAS* 2016;113:2538), but may in fact even increase

distress as compared to staying awake. Fourth, depriving people suffering from depression from their fragmented sleep can have stunningly fast favourable effects on mood (Wirz-Justice, *Biol Psychiatry* 1999;46:445). These examples suggest that mistimed or restless sleep interfere with optimal brain function and with the overnight resolution of emotional distress. The resulting accumulation of distress may promote the development of chronic hyperarousal, giving clinical relevance to the role of unperturbed sleep in emotion regulation in insomnia, depression, and posttraumatic stress disorder.

9.30 - Sleep in eating disorders

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Insomnia has been considered a transdiagnostic process that may increase the probability of occurrence of other disorders or the comorbidity rates between mental disorders (Harvey, 2011). Also in the eating disorders field there is evidence that insomnia is highly prevalent. For instance Kim and colleagues (Kim et al., 2010) considering a clinical sample of 400 EDs patients showed that sleep disturbances were highly prevalent (50.3%). Moreover, Lombardo and coll. (2016) showed that presence and persistence of poor sleep increase comorbidity and attrition to the standard treatment. The authors studied a cross-sectional sample of 562 ED out-patients and half of them were also assessed after 1 year of standard treatment. At T0 poor sleep predicted severity of ED symptoms through the mediation of depression. At T1 persistence of poor sleep predicted severity of the ED symptoms both directly and through the mediation of depression notwithstanding the treatment that the patients received for the main disorder. The transdiagnostic role of insomnia, however, may be also viewed as an opportunity to enhance effectiveness of the treatments for the main disorder. In the case of EDs, treatment is very challenging: drop-out rates are high (30-70%, Fassino et al., 2009), success rate low (30%, Richard, 2005) and presence of comorbidity predicts worse treatment outcome (e.g. Keel et al., 2011). On the contrary, CBT for insomnia (CBT-I) is effective in improving both sleep quality (e.g. Mitchell et al., 2012; Koffel et al., 2015) and the symptoms of the main clinical condition (e.g. anxiety, depression, etc) to which insomnia is associated (e.g. Edinger et al., 2009; Haynes et al., 2011; Belleville et al., 2011).

9.45 - Sleep characteristics of mental disorders

BAGLIONI C.

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Sleep disturbances are highly prevalent in mental disorders and have been associated with adverse effects for cognitive, emotional, and interpersonal functioning. While traditional models proposed that distinct sleep alterations would map to specific mental disorders, novel models emphasize the transdiagnostical nature of sleep disturbances as a dimension for brain and mental health. A meta-analysis was performed aimed at

determining the polysomnographic (PSG) characteristics of several mental disorders. Controlled PSG studies evaluating sleep in affective, anxiety, eating, pervasive developmental, borderline and antisocial personality disorders, attention-deficit-hyperactivity disorder (ADHD), and schizophrenia were included. PSG variables of sleep continuity, depth, and architecture, as well as rapid-eye movement (REM) sleep were considered. Sleep alterations were evidenced in all disorders, with the exception of ADHD and seasonal affective disorders. Sleep continuity problems were observed in most mental disorders. Sleep depth and REM pressure alterations were associated with affective, anxiety, autism and schizophrenia disorders. Comorbidity was associated with enhanced REM sleep pressure and more inhibition of sleep depth. No sleep parameter was exclusively altered in 1 condition; however, no 2 conditions shared the same PSG profile. Sleep continuity disturbances imply a transdiagnostic imbalance in the arousal system likely representing a basic dimension of mental health. Their treatment in standard care of mental disorders may improve interventions outcome. Sleep depth and REM variables might play a key role in psychiatric comorbidity processes through their interaction with cognitive and emotional processes. Constellations of sleep alterations may define distinct disorders better than alterations in 1 single variable.

ORAL PRESENTATIONS
SATURDAY, MAY 27th

11.00 - 12.15

Chair: *Elena Bilotta*

11.00 - The simulation heuristic, paranoia, and social anxiety in a non-clinical sample

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Based on the observation that efforts to make sense of intense emotional experiences only serve to elaborate and perpetuate these experiences, the Hyper-Emotion Theory (HET; Johnson-Laird, Mancini, & Gangemi, 2006) predicts that individuals will show a superior ability to reason about topics related to their difficulties or preoccupation. This proposition was tested in an undergraduate sample using a mental simulation task. Participants from a sample of 63 undergraduates were divided based on self report cutoff scores into high paranoia, high social anxiety/low paranoia, and low paranoia/social anxiety groups. Participants were asked to simulate responses to incomplete paranoia and social anxiety themed scenarios, which either matched or did not match individual concerns, by giving a step-by-step account of what occurred in the missing part of the scenario. Participants also completed the jumping to conclusions (beads) task. The prediction was that paranoid and socially anxious individuals would be expert reasoners about content matching their areas of concern, reflected in good mental simulations of relevant scenarios. The prediction was not supported for paranoia. However, the social anxiety comparison group on average better simulated a scenario with congruent vs non-congruent thematic content. Partial support was also found for the prediction, based on the putative operation of the simulation heuristic (Kahneman & Tversky, 1982), that better simulations would lead to greater worry where this was mediated by increased subjective probabilities. Finally, in an exploratory analysis, JTC bias was found to be positively related to goodness of simulation for paranoia themed scenarios within the paranoia group.

11.15 - Spatial processing in adults with attention deficit hyperactivity disorder (ADHD)

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Previous studies have characterized right hemisphere dysfunction and hypo-arousal dysfunction as two main deficits of ADHD. Arousal as well as right hemisphere activity have been linked with global visual processing. Moreover, many studies have demonstrated global bias after phasic alertness. In the current study we hypothesized that adults with ADHD would have a deficit in global visual processing caused by a right hemisphere deficit, and overall low arousal levels. Moreover, we predicted that phasic alertness would "fix" the deficit in global visual processing. A set of 7 tasks was used to

assess: (a) global\local processing, (b) effect of phasic alertness on global\local processing, and (c) general intelligence as a control factor. Both ADHD subjects and controls showed faster reaction time for global processing. When the tasks demanded local processing, controls showed higher interference when the global stimulus was incongruent with the local stimulus. When tasks demanded global processing, controls showed no interference when the local stimulus was incongruent to the global stimulus. This basically replicated Navon's classic findings. ADHD subjects, on the other hand, had similar interference in incongruent trials, both in local tasks and in global tasks. In all task, participants diagnosed with ADHD exhibited a more local processing style compared to controls. Phasic alertness increased global processing bias for both groups. Intelligence did not significantly affect performance between groups. In conclusion, we found that while controls had a bias toward global visual processing, ADHD subjects did not, and in most cases even had a bias toward local processing.

11.30 - Attentional bias modification training for unsuccessful dieters

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Dieting is very common behavior. Yet, the prevalence of overweight and obesity is at an all-time high, showing that people seem to fail at their dieting attempts. It has been argued that the failure to control food intake may be due to an attentional bias for food cues. Decreasing this bias might help unsuccessful dieters to successfully lose weight.

The current study was designed to test whether an attentional bias modification (ABM) training is effective in reducing attentional bias towards food cues, and enhancing the ability to disengage from food cues. Subsequently, the effect on food craving and food intake will be tested. A new gamified ABM-task, the Bouncing Image Training Task (BITT; designed by Macleod and colleagues) was used.

Participants were 113 female self-reported unsuccessful dieters, randomly assigned to the training- or the no-training control group. Both groups had a baseline and a follow-up measure exactly one week apart during which they answered questions about food craving, and performed several attentional bias measures. During follow-up, all participants had a 24-hour food recall interview. The first and final BITT training session took place in the lab; in between participants carried out six daily home training sessions via the internet.

First results showed that the training was effective in both reducing attentional bias towards food (Cohen's $d=0.57$), and increasing the ability to disengage from food items (Cohen's $d=0.87$). Further results will be discussed, including questions about transference to several attentional bias measures, generalization to not-trained food images, food craving, and food intake.

12.00 - Vulnerability to depression: Rumination and cognitive reactivity and their relationship to habitual response tendencies

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Cognitive theories postulate that some form of cognitive dysregulation is a major vulnerability of relapse/recurrence in depression. Depressive rumination and cognitive reactivity are two such vulnerabilities that involve activation of negative cognitive content or processing mode as a result of stress or changes in mood. A habit-related framework of rumination has been proposed where rumination is seen as a form of mental habit -a learned response that through past repetitions that becomes automatically triggered by endogenous (e.g. mood) or exogenous stimuli. We recently completed a study of this framework in a sample of 20 formerly depressed (FD) and 22 never-depressed (ND) participants, using both self-report measures and experimental tasks. We tested if depressive rumination had characteristics of automaticity that is characteristic of mental habits (lack of conscious awareness, lack of control, lack of conscious intent). We also tested if depressive rumination and cognitive reactivity was related to the tendency to rely on habitual stimulus-response contingencies rather than goal-directed action-outcome contingencies during a computerized instrumental learning task that might reflect innate deficiencies in goal-directed action control. Results showed that rumination and cognitive reactivity was greater in the FD group, but the groups did not differ on a measure of cognitive reactivity measured in the experimental setting. Tendency towards habit directed action control correlated with number of past depression episodes in the FD group. In this presentation, we discuss the theoretical importance of these findings and will present preliminary results from a replication study that is under way.

ORAL PRESENTATIONS
SATURDAY, MAY 27th

14.00 - 15.30

Chair: *Stefania Fadda*

11.00 - Deontological guilt elicits disgust and Obsessive-Compulsive Disorder-like washing behaviors

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Guilt plays a pivotal role in the genesis and maintenance of obsessive-compulsive disorder (OCD)-like behaviors. The present study aimed at investigating whether the induction of deontological versus altruistic guilt in healthy volunteers may activate cleaning behaviors aimed at reducing the evoked emotion of disgust. Healthy participants were randomly assigned to an altruistic (n = 30; 50% women) or deontological guilt (n = 30; 50% women) induction followed by a cleaning task, while their electrocardiogram was continuously recorded to derive vagally-mediated heart rate variability (HRV). At baseline and after each experimental condition, participants' momentary emotional state was assessed by visual analog scales (VAS).

Random-effect models showed that compared to altruistic guilt, deontological guilt had the effect of: a) increasing subjective (VAS) and objective (HRV) levels of disgust; b) increasing OCD-like washing behaviors; c) leading to a better capacity of washing behaviors to reduce disgust. Correlation analyses showed that these effects were stronger in participants with higher levels of scrupulosity and symptoms like sin fear and washing, as indicated by scores on the Obsessive-Compulsive Inventory-Revised. Furthermore, washing behavior was stronger in participants with higher scrupulosity only in the deontological guilt condition. Results support previous reports on a distinctive relation between deontological (but non altruistic) guilt and both disgust and OCD symptoms.

11.15 - Schemas, Modes and Coping styles in patients with Obsessive-Compulsive Disorder

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Schema Therapy (ST) places particular emphasis on affective experiences, therapeutic relationship and early life experiences. *Ad hoc* ST conceptualizations for specific psychological conditions, mainly focusing on personality disorders, have been suggested in the last decade. The aim of this study was to explore schemas, modes and coping styles in outpatients with Obsessive-Compulsive Disorder (OCD). Thirty patients with OCD [DSM5 criteria, mean age(SD)=33(8,38)years;F18] were recruited. Schemas, modes and coping styles were measured. Indexes of OCD symptoms', guilt and disgust levels

were also collected. Descriptive, correlation and multiple regression analyses were performed.

Overall patients showed a severe OCD symptomatology with a mean score of 20 on the Yale-Brown OC Scale. Symptoms' severity was significantly associated with schemas intensity of social isolation, failure, subjugation and punishment, and with the punitive parent mode. A positive relationship was also detected between OCD severity, and avoidance and intra-psychic coping styles and disgust intensity. Specific regression models showed that OCD severity was the best predicted by social isolation schema, punitive parent mode and behavioral avoidance coping style. Our data confirm previous findings on Schema model applied to OCD. An important limitation of the study is represented by the lack of control group.

11.30 - Sharing honours and obligations: the role of interpersonal motivations and values

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Why are people willing to act in a prosocial way sometimes, and sometimes they are not? Much research has been addressed to this question during the last two decades into the fields of evolutionary anthropology, social psychology, and game theory. An innate motivation to altruism, sharing and reciprocity, together with individual and cultural differences in the orientation to social and moral values, and with the subjective evaluations that we make of others' social behaviour, seem to account for much of the variability in our prosociality.

By a clinical point of view, understanding the mechanisms that can foster or hamper our propensity to cooperate is a relevant matter, since a collaborative mindset is acknowledged as a fundamental feature of a good therapeutic alliance (Liotti & Gilbert 2011). A recent study by Hein and colleagues (2016) shows that the brain's functional network architecture allows to distinguish between empathy-based and reciprocity-based prosocial acts.

The present study aims at verifying people's willingness to share a small prize or a small fee with another person, according to three different conditions: when the other behaves altruistically, selfishly, and fairly. Orientation to social values (Karangolar et al, 2013) and moral foundations (Graham et al, 2012) are also taken into consideration.

Our hypotheses are as follow: a) sharing obligations is harder than sharing honours; b) different interpersonal motivations underlie apparently similar prosocial acts, but fairness operates as a more stable prosocial foundation than altruism.

Results are discussed in the light of their theoretical implications for the therapeutic alliance.

11.45 - The role of cognitive control mechanisms in selective attention towards emotional stimuli

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The role of cognitive control mechanisms in reducing interference from emotionally salient distractors was investigated. In two experiments, participants performed a flanker task in which target-distractor affective compatibility and cognitive load were manipulated. Differently from past studies, targets and distractors were presented at separate spatial locations and cognitive load was not domain-specific. In Experiment 1, words (positive vs. negative) and faces (angry, happy or neutral faces), were used respectively as targets and distractors, whereas in Experiment 2, both targets (happy vs. angry) and distractors were faces. Findings showed interference from distractor processing only when cognitive load was high. The present findings indicate that, when targets and distractors are presented at different spatial locations, cognitive control mechanisms are involved in preventing interference from positive (Exp. 1) or negative distractors (Exp. 2). The role of stimulus valence and type is also discussed with regard to different patterns of interference observed. The findings help understanding the conditions and cognitive functions which favor efficient goal-directed behavior in the presence of emotionally salient yet task-irrelevant information, and are in line with the observation that several mental disorders that are associated to impoverished cognitive control show a reduced capability to counteract emotional distraction.

12.00 - Association between Attention and Heart Rate Fluctuations in Pathological Worriers

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Recent data suggests that several psychopathological conditions are associated with alterations in the variability of behavioral and physiological responses. Pathological worry, defined as the cognitive representation of a potential threat, has been associated with reduced variability of heart beat oscillations (i.e., decreased heart rate variability; HRV) and lapses of attention indexed by reaction times (RTs). Clinical populations with attention deficit show RTs oscillation around 0.05 and 0.01 Hz when performing a sustained attention task. We tested the hypothesis that people who are prone to worry do it in a predictable oscillating pattern revealed through recurrent lapses in attention and concomitant oscillating HRV. Sixty healthy young adults (50% women) were recruited: 30 exceeded the clinical cut-off on the Penn State Worry Questionnaire (PSWQ; High-Worry, HW); the remaining 30 constituted the Low-Worry (LW) group. After a diagnostic assessment, participants performed two 15-min sustained attention tasks, interspersed by a standardized worry-induction procedure. RTs, HRV and moods were assessed. The analyses of the frequency spectrum showed that the HW group presents a significant higher and constant peak of RTs oscillation around 0.01 Hz (period 100 s) after the induction of worry, in comparison with their baseline and with the LW group that was not responsive to the induction procedure. Physiologically, the induction significantly reduced high-frequency HRV and such reduction was associated with levels of self-reported worry. Results are coherent with the oscillatory nature of the default mode network (DMN) and further confirm an association between cognitive rigidity and autonomic nervous system inflexibility.

12.15 - Rumination: functions and goals. A review of literature.

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Rumination, defined as a habitual and repetitive thinking style that revolves around a specific theme, has been involved in the development and maintenance of severe psychopathologies. Despite such a critical role in psychopathology, goals and functions of rumination have not yet been unravelled. The rationale behind investigating goals of rumination relies on the evidence that repetitive thinking may be adaptive and indeed, rumination is a common thinking process in a non-clinical population.

Within this frame, the overall aim of this study is to build an exhaustive model of rumination based on Carver and Scheier's goals-driven behaviour self-regulation theory.

To reach this aim, we revised the most relevant theoretical models and experimental evidence on rumination in order to identify potential indicators of the role of rumination within the individual's goal system.

Based on current evidence, the function of ruminative thinking is to focus on those events that may interfere with goal achievement (or anti-goal avoidance) in order to facilitate progression toward relevant goals. In particular, rumination seems to serve goals at an intermediate level in the goal hierarchy. Hence, by repeatedly focusing on an event, physical sensation or feeling which is related to an unachieved goal, the individual tries to overcome the block in order to reach the ultimate goal of the desired self.

12.30 - Deontological Guilt, Uncertainty and Checking Behavior

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Previous research established a link between uncertainty and checking behavior in OCD. More specifically, uncertainty promotes checking behavior which, in turns, maintains a sense of uncertainty. The underlying idea is that a lack of certainty is particularly aversive for OCD patients. In the present work we advance that uncertainty is a key variable to understand OCD because of its interference with the goal of preventing/reducing deontological guilt. Indeed, growing evidence suggests that preventing/reducing deontological (rather than altruistic) guilt is a central goal of OCD patients which could foster their checking symptoms. To prevent deontological guilt it is of fundamental importance to exclude that a rule has been violated. Uncertainty undermines confidence that no rules has been violated. To test this hypothesis we conducted an experiment which guilt and uncertainty were manipulated and checking was operationalized by measuring search time in a visual detection task. Results are consistent with our hypothesis and show that uncertainty affected checking behavior especially for participants under deontological rather than altruistic guilt. Theoretical implications are discussed.

SYMPOSIUM
SATURDAY, MAY 27th

16.00 - 17.00

Chair: *Ann Meulders*

The legacy of Paul Eelen: An anthology of learning research in Leuven

Paul Eelen (†21/08/2016) is the founding father of a generation of learning psychologists and by learning inspired researchers of clinical and health-related problems at the University of Leuven (Belgium). At the end of the 20th century, interest in human conditioning research was waning. Paul Eelen, however remained loyal to “his” beloved learning theory, and his persistence turned out to be visionary (quoting Prof. Marcel van den Hout), as evidenced by the current worldwide revival of conditioning research.

In the legacy of Paul Eelen, his scientific disciples continued to propagate the associative learning framework and its application to psychopathology.

In this symposium, we will bring together some of the latest innovations that were conducted in the spirit of the work that he started. We have four speakers lined up addressing the role of learning principles (acquisition, generalization and extinction) in different forms of ill health and psychopathology. First, Dr. Van den Bergh will talk about learning of trigger beliefs in allergic rhinitis. Second, Dr. Ann Meulders will focus on generalization processes in chronic pain patients. Third, Dr. Bram Vervliet will discuss the role of subjective relief in a novel human avoidance and extinction protocol. Finally, Dr. Yannick Boddez will introduce a novel appetitive learning theory of prolonged grief.

16.00 - Acquisition and generalization of trigger beliefs in allergic rhinitis

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Objective: In allergic conditions, symptoms are typically triggered by different environmental agents. However, trigger identification and management may be influenced by pre-existing cognitions and individual differences in threat sensitivity. This study investigated the effect of conceptual knowledge and threat sensitivity on acquisition and generalization of respiratory symptom triggers using an experimental model of cough trigger identification.

Methods: Participants with allergic rhinitis (n=24) or controls (n=24) performed a lab-based trigger acquisition procedure in which unique exemplars of two trigger categories were either paired with saline inhalation (CS- category) or citric acid inhalation for 8/10 of trials (CS+ category). One day later, recognition and generalization of symptom expectancy was tested for CS category exemplars as well as novel trigger categories.

Results: During acquisition, symptom expectancies increased for CS+ compared to CS- exemplars, and this increase was strongest in participants with rhinitis. Differential symptom expectancies persisted during generalization test and generalized to novel trigger categories, with stronger generalization in rhinitis vs. control participants. Threat sensitivity was associated with stronger acquisition and generalization to similar

trigger categories in the control group, whereas in the rhinitis group, stronger symptom expectancies emerged for unrelated trigger categories.

Conclusions: Conceptual knowledge influences acquisition and generalization of trigger-symptom expectancies. Different patterns of acquisition and generalization in both groups and interactions with threat sensitivity highlight the role of threat perception in the development of trigger-symptom expectancies and associated burden in allergic conditions.

16.15 - Temporal Dynamics of relief in avoidance conditioning and fear extinction: Experimental validation and clinical relevance

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Dysfunctional avoidance is a hallmark of all the anxiety disorders, but little is known about the mechanism that pushes functional into dysfunctional avoidance. Relief is a putative reinforcer of avoidance behaviors and may play a role in the development of dysfunctional avoidance, but it has received little empirical scrutiny so far. I will discuss the temporal dynamics of subjective relief in a novel human avoidance and extinction protocol, and examine physiological and neural correlates of relief and avoidance. I will argue that a more general study of reward processing deficiencies in the anxiety disorders may shed light on dysfunctional avoidance and fear extinction impairments.

16.30 - Generalization of pain-related fear in chronic pain

MEULDERS A., VLAEYEN J.

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Accumulating evidence shows that pain-related fear is often more disabling than the pain itself, and contributes to the transition from acute to chronic pain disability. Growing evidence suggests that pain-related fear is acquired via associative learning. In the clinic, however, spreading of fear and avoidance is observed beyond movements/activities that were associated with pain during the original pain episode. From an associative learning perspective, one mechanism accounting for this spreading of fear is stimulus generalization. We propose that overgeneralization may play a role in the etiology and/or maintenance of chronic pain disability by spreading of undesired defensive behaviors. In this talk, I will present a series of experiments investigating (1) differences in generalization of pain-related fear and its extinction between chronic pain patients (chronic hand pain patients and fibromyalgia patients) and healthy pain-free controls, (2) possible vulnerability factors leading to overgeneralization (e.g. pain-catastrophizing), and (3) resilience factors (e.g. positive affect) that might protect against overgeneralization.

16.45 - The presence of your absence: An appetitive conditioning theory of prolonged grief

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We present an associative learning theory of prolonged grief. From conditioning research on appetitive disorders (e.g., addiction and binge eating), we borrow the concept cue-elicited craving. More precisely, we propose that, throughout a life together, a variety of cues become associated with the presence of the loved one and that because of this these cues can trigger craving and (an action tendency for) searching for the deceased. Starting from this perspective, we additionally invoke extinction and generalization phenomena to explain the transition from grief to prolonged grief. We argue that the theory has good heuristic value, because it allows to explain a variety of grief symptoms and to bring together existing knowledge in a unifying learning framework. In addition, we illustrate that the theory has good predictive value, because it opens the door to considering new research and treatment directions.

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