Symposium 1
Compassion & the Body - Therapy Implications

Dr Alan Watkins, Dr Nicola Petrocchi & Dr Philipp Kanske

Transcranial direct current stimulation enhances vagal tone and soothing positive affect

Nicola Petrocchi

Bio: Nicola Petrocchi has a Ph.D. in Psychology and Social Neuroscience, and he is a certified CBT psychotherapist. After years of training with Prof. Gilbert he has founded Compassionate Mind ITALIA, for the research, training and dissemination of CFT in Italy and Europe. He translated and edited the book Compassion Focused Therapy - Distinctive Features in Italian, and he is the author of several international scientific papers.

Abstract: The heart and the brain are the two most important organs in the body and, as such, are mutually interconnected. A growing body of evidence has described the pathways via which several brain regions act as a network to support adaptive cardiovascular reactions to stressors, specifically impacting on autonomic regulation of the heart (vagal tone). However experimental manipulations are necessary to increase our insight not only in the causal relationship between cortical functioning and cardiovascular responses, but also in the impact of this relationship on our emotional experience. A recent body of research emerged with the aim to influence cardiovascular system functioning by non-invasive brain stimulation methods such as transcranial direct current stimulation (tDCS). The aim of the present work was to study if a single-session of tDCS over the insular cortex (IC) could enhance vagally-mediated heart variability (HRV) in 50 young, middle-aged, and elderly participants.

Considering the relationship between increased vagal tone and the experience of compassion, we also tested whether enhance vagally-mediated heart variability (HRV) induced by tDCS could increase positive affectivity (soothing positive affect) typically linked to the activation of a compassionate motivation. Results supported the bi-directional pathways connecting the brain, cardiovascular system and emotional experiences, suggesting new ways of facilitating the emergence of positive affective states linked to psychological well-being.
Plasticity of the social brain: Evidence for specific mental training effects on attention, compassion and cognitive perspective-taking

Philipp Kanske

Bio: Philipp Kanske is a psychologist, neuroscientist and psychotherapist, currently heading the Research Group “Psychopathology of the Social Brain” at the Department of Social Neuroscience, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig. His work centers on emotion, how we regulate emotions and understand the emotions of others. He uses neuroscience tools to investigate alterations of these processes in patients with mental disorders and to elucidate plasticity through training. His work has been acknowledged with several awards, including the Otto Hahn Medal of the Max Planck Society and the Young Investigator Award of the European Brain and Behaviour Society. Since 2015 he is elected member of the German Young Academy at the National Academy of Sciences – Leopoldina.

Abstract: Successful social encounters are reliant on several separable affective and cognitive functions like empathy, compassion and perspective-taking. This talk will present research on the neural underpinnings of these functions, on how they can be trained and what effects such training has on social behavior and well-being. In a current longitudinal intervention study, the ReSource project, we trained participants in three separate 3-months modules: (1) the Presence Module involved breath and body focused meditations that emphasize interoceptive awareness and attentional skills, (2) the Affective Module cultivates affective and motivational dispositions such as loving-kindness and compassion, and (3) the Perspective Module targeted metacognitive dispositions such as awareness of thoughts and cognitive perspective taking on self and others.

Results show differential training effects of the different modules. Using a newly developed video task, the EmpaToM, we found strongest increase in compassion after the Affective Module, while the Perspective Module specifically enhanced performance in cognitive perspective-taking questions. All meditation trainings enhance attentional functions, irrespective of their specific focus. The enhanced socio-affective and socio-cognitive functioning went along with changes in prosocial behavior, specifically in altruistic motivation, norm compliance and strategizing. The different training modules induced differential effects on these sub-components of human prosociality: the Affect Module was particularly effective in enhancing altruistic motivation whereas the Perspective Module led to strongest decreases in norm-driven punishment behavior. Furthermore, the mental training reduced stress as assessed on the subjective, sympathetic, and endocrine (i.e. cortisol) level.

These findings have not only important implications for the basic understanding of mechanisms underlying the plasticity of the social brain as well as human physiology, prosociality, and subjective well-being, but also for the construction of intervention programs aiming at fostering mental and physical health in education, clinical settings, and society in general.
Connecting biology to emotional motivation and proactive behaviour

Alan Watkins

Bio: Alan Watkins qualified as a medical doctor in 1986 from the University of London. He also has a first class degree in Psychology and a PhD in Immunology. He has held a number of academic posts including an Honorary Senior Lecturer in Neuroscience at Imperial College, London and an Affiliate Professor of Leadership at the European School of Management, the no.2 Business School in the UK, and the oldest business school in the world. He currently runs a consultancy, Complete Coherence Ltd, that provides thought leadership to numerous organisations around the world on topics such as leadership development, organisational effectiveness, team performance, health and well-being. He has a very broad mix of, academic, scientific, technological, media and commercial abilities. He is published over forty papers in peer reviewed academic journal, written a number of book chapters and is just completing his fifth book. He is also actively involved in heart rate variability research and has worked with the world’s leading manufacturer of cardiovascular equipment to build a unique suite of biofeedback technology products. He has built a number of multi-platform Apps to help enhance emotional literacy, emotional self-regulation and energy management.

Abstract: Seeing the body as a complex dynamic interacting set of systems is critical to understanding the function and effective performance of the whole system, as well as each sub system. Behaviours, compassionate or otherwise, are driven by motivational systems underpinned by emotional states which themselves are underpinned by physiological data streams such as heart rate variability. Being able to understand the complex interaction of all these levels is key to helping us achieve normal as well as optimal functioning.