

# Plasticity of Empathy and Prosocial Motivation: From Outgroup Hate to Ingroup Favouritism

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## ABSTRACT

*The Brains that pull the Triggers. 3rd Conference on Syndrome E, Paris IAS, 10-12 May 2017 - Session 4 - Brains that Pull the Triggers: Plasticity of Behavior*

In the present talk, I will present neuroscientific and psychological findings on the functioning of social emotions and motivations such as empathy and compassion and will give evidence for their fragility and modulation by beliefs and context as well as their trainability and plasticity through mental training interventions.

The social neurosciences have focused on the question of how people relate to and understand each other. Hereby, researchers have distinguished between at least two different routes on the understanding

of others: one affective-motivational route referring to our ability to feel with (empathy) and for (compassion) another person, and a cognitive route allowing to infer other people's intentions, beliefs, and thoughts - a capacity also referred to as Theory of Mind, mentalizing or cognitive perspective taking. After a definition of concepts, I will shortly revise the main results of neuroscientific studies investigating empathic brain responses elicited by the suffering of another being and show how these empathic brain responses can easily be modulated by several contextual and stimulus intrinsic factors such as perceived fairness of others or whether one thinks that another person is belonging to your ingroup or your outgroup.

I will show how easily empathic brain responses can be turned into opposite feelings of Schadenfreude and revenge and thus lack of helping and prosocial behaviors in healthy adult population merely based on certain beliefs they have. I will also show evidence for a dissociation of the two routes of social cognition in psychopathology, namely preserved Theory of Mind but lack of empathy in aggressive male offenders. After showing conditions for the lack of empathy, I will turn to the question of the improvement and malleability of these social capacities and show first data giving evidence for brain and behavioral plasticity in the domain of empathy, compassion and Theory of Mind after short- and long-term mental training intervention programs.

I will show first results of the *ReSource Project*, a large-scale multi-methodological one-year secular mental training program in which participants were trained in different 3-month mental training modules

focusing on a) attention-based mindfulness, b) prosocial motivation and compassion, and c) perspective taking on self and others. Training-related changes were assessed on measures of functional and structural brain plasticity, social cognition and prosocial behavior as well as stress and health markers. Finally, I will discuss the potential use of these scientific findings for addressing concrete societal problems as well as their limitations.

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