

## Malleable Emotions: The Adaptability of Empathy and Compassion

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Social emotions, such as empathy and compassion, are crucial for our everyday interactions. Empathy has different meanings. I consider empathy as the capacity to share the feelings of others. We can, for instance, share the happiness of a friend or feel something of the suffering that a person who is homeless might experience. While empathy can be felt for positive and negative emotions alike, compassion is a feeling of concern for the suffering of others and is associated with the motivation to help. In social interactions, empathy and compassion enable us to understand what others feel and to adapt our actions accordingly.

In my work as a neuroscientist and psychologist, I have tested whether and how far neural functions related to emotions can be altered through training, and how the training of emotional capacities can affect well-being and social behavior. In [several studies](#), I observed that training related to particular emotions leads to specific changes in brain functions, as well as to changes in emotional and behavioral responses to social situations.

I first conducted a series of studies involving meditation-based trainings in compassion for female volunteers in the Netherlands and in Switzerland. Each of these trainings involved efforts to strengthen emotions of kindness and benevolence towards oneself and others through silent contemplation of different individuals (for example, a benefactor, oneself, a friend, a stranger, a person found to be difficult) and wishing each of these people well. To this end, internal wishes like “May you be happy” or “May you be healthy” were encouraged.

To test the effects of this type of training, participants were shown short documentary video clips of people who were suffering or of people in everyday life situations while their brain activation was measured by means of functional resonance magnetic imaging (fMRI). In addition, participants provided self-reports on their emotional reactions to each video clip.

By comparing the data before and after the training with an active control group, I found that compassion training increased positive emotions and neural functions in areas related to feelings of social connection. This was even the case when participants were shown videos of others who were suffering. I also found that after participants had undergone compassion training, they were more likely to engage in helping behavior towards strangers, as measured by a computerized game in which two players simultaneously engage in a treasure hunt involving real money. Thus, compassion emerged as an adaptive emotion that fosters resilience to potentially stressful situations and altruistic behavior.

Another line of my research aimed to understand the different effects of empathy for pain as compared to compassion. To this end, volunteers underwent two trainings. In a first training, they imagined a series of people who were suffering and were encouraged to share this suffering, at an emotional level, as deeply as possible. In a second training, they strengthened their compassion by using the same training techniques described above. Prior to and after each of these trainings participants' emotional and neural reactions were monitored as they viewed videos of others who were suffering and of others engaged in everyday situations. Having completed the trainings,

participants reported more negative feelings than prior to the training. In addition, the first training led to an increase in brain activations in areas related to empathy for pain. Importantly, these effects could be reversed by a subsequent compassion training.

These studies suggest that emotions are highly malleable and that by training adaptive emotional responses we can improve our well-being and helping behavior. This is not only important for people working in professions that involve the provision of assistance to others, but also for those working in the field conflict resolution. In situations of conflict escalation it may be more helpful for mediators to relate to their clients' emotional outbursts with compassion rather than sharing their distress.

One of the biggest current challenges is to find ways in which empirical studies on empathy and other emotions can contribute to defining evidence-based strategies for conflict resolution. I believe that this challenge is best met with an inter-disciplinary approach in which researchers work together with practitioners from the peacebuilding and conflict resolution community in order to ensure that scientific insights will be applicable in the field.

*For more information of Olga's project on emotions in conflict resolution, click [here](#). For a more details account of Olga's research findings, see: Klimecki, O.M. (2015) The Plasticity of Social Emotions. *Social Neuroscience*. 15, 466-473.*