Embodied morality: Autonomic signatures of spontaneous deception in mindfulness trained practitioners

ABSTRACT:

Background
Recent meta-analyses suggest that mindfulness meditation may enhance prosocial behavior. Evidence regarding moral behavior is still scarce. One open question is whether being aware of our body and its signals biases our moral decision-making.

Aims
We aimed at investigating the effects of mindfulness meditation on spontaneous deception and its physiological and emotional correlates.

Method
In Experiment 1, the Temptation to Lie Card Game (TLCG, a task measuring spontaneous deception in a social context) and self-report measures were administered to participants who underwent a mindfulness meditation training or were waitlisted. In Experiments 2 and 3, TLCG and self-report measures were administered to expert mindfulness practitioners with distinct levels of expertise (ranging from 1 to 25 years of practice) and control participants, while recording autonomic nervous system activity and facial emotional expressions.

Results
Trained participants deceived significantly less than control ones and showed higher interoceptive awareness and non-reactivity, compared to control ones (Experiments 1). Moderation analyses revealed a significant interaction between weekly mindfulness meditation training minutes and MAIA-2 Attention Regulation on moral behavior change (Experiment 1). Further, in highly skilled mindfulness meditation practitioners, the amount of weekly training predicted increased altruistic behavior in the TLCG (i.e., more frequent other-gain deception) (Experiments 2-3). Trained participants exhibited (i) decreased peri-orbital temperature and (ii) increased Corrugator supercilii muscle temperature, before dishonest responding (Experiments 2-3). These results may index (i) a downregulation of the sympathetic nervous system activity and (ii) an increase in negative affect, before dishonest decision-making in mindfulness-trained participants (Experiments 2-3).

Conclusions
Our preliminary results suggest that mindfulness meditation practice decreases self-serving dishonest behavior and increases awareness of one's bodily and emotional state. The amount of mindfulness meditation practice predicted moral behavior change in practitioners who reported the highest regulation of attention toward internal bodily signals, and is also associated with increased altruistic behavior. Thermal imaging data showed that before dishonest decision-making, mindfulness-trained practitioners showed enhanced physiological reactivity compared to control participants.

Published Work:

Feruglio, S., Panasiti, M. S., Crescentini, C., Aglioti, S. M., & Ponsi, G. (2023). Training the moral self: An 8-week mindfulness meditation program leads to reduced dishonest behavior and increased regulation of interoceptive awareness. *Mindfulness*, *14*, 2757–2779. https://doi.org/10.1007/s12671-023-02233-1

Feruglio, S., Panasiti, M. S., Crescentini, C., Aglioti, S. M., & Ponsi, G. (2022). The impact of mindfulness meditation on social and moral behavior: Does mindfulness enhance other-oriented motivation or decrease monetary reward salience? *Frontiers in Integrative Neuroscience*, *16*, 963422. https://doi.org/10.3389/fnint.2022.963422

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