

## Arsht Research on Ethics and Community Grant

### Neural Underpinnings of Altruism Regulation

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### Abstract

Behavior could be considered the ultimate marker of people's morality. It represents the outcome of ideas of right and wrong, personal and social conflicts, and present emotional state. Central to morality is the capacity to care and give that can be considered altruism. Altruism can be seen in the light of underlying motivation. Is a behavior truly unselfish and uninterested, or is it aimed at improving one's reputation, bound by expectations of reciprocity or, duty? In this regard, the effect of emotion and impulsivity on cognition and in the choices we make is amply recognized. It is predictable that a behavioral outcome such as altruism would be vulnerable to intense emotion, such as anger or spite. Different disciplines have recently increased our understanding of the neural substrates of moral decisions. Neuroeconomics studies how brain activity leads to choice, and cognitive neuroscience has identified a core of brain regions involved in moral issue processing: medial prefrontal cortex, anterior and posterior cingulate cortex, posterior superior temporal sulcus, insula and amygdala. We aim to use functional brain imaging in a setting conducive to altruistic behavior to understand the neural substrates of emotional regulation of altruism. Altruistic behavior is expected to be associated with activity in neural networks regulating moral cognition, whereas the emotional regulation of altruism is expected to be related to the connectivity of the amygdala and insula to these networks.

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