

Probing the relationship between brain activity and moral judgments of children

9 March 2016



Using EEG and eye tracking to assess moral judgements in children. Credit: SensoMotoric Instruments GmbH

It has long been known that the foundations of morality are present in children from a very young age, and that morality matures during childhood. But how is brain activity related to moral judgments in young children?

Developmental neuroscientists Dr Jason Cowell and Dr Jean Decety from the Child Neurosuite at the University of Chicago sought to answer this question as part of a recent study, which is now the subject of this video produced by Research Square.

They used Brain Products EEG, eye tracking from SensoMotoric Instruments, and behavioral sharing to examine how [brain activity](#) is related to [moral judgments](#) and also, to assess children's willingness to share based on EEG signals.

Dr Cowell and Dr Decety showed the children short videos of cartoon characters helping or harming each other. The children's level of attention was

gauged by tracking their direction of gaze while brain activity was recorded using electrodes placed on their scalps.

Although [eye tracking](#) showed that the amount of attention paid to the characters and their actions did not differ between the two types of scenes, differences in brain activity were observed depending on whether the children viewed a helping or a harming scene.

Brain activity related to automatic emotional responses was greater for helping scenes, whereas activity related to the slower process of detecting and reacting to conflict was greater when the children viewed harming scenes. These findings suggest that children's moral decision-making involves the integration of both automatic and more controlled neural processing.

To determine whether the early automatic or later controlled neural activity predicted actual moral behavior, the researchers then assessed the children's generosity based on how many stickers they were willing to share with an anonymous child. They then correlated the children's generosity with individual differences in brain activity generated during helping versus harming scenes. Only differences in brain signals associated with deliberate neural processing predicted the children's sharing behavior, suggesting that moral behavior in children depends more on controlled reflection than on an immediate emotional response.

A more recent study by the same authors showed that [children](#) shifted their attention depending on which characters initiated an action and which received that action. But ultimately, as this video concludes, future studies are needed to investigate the roles environmental and cultural factors play in shaping morality.

More information: Jason M. Cowell et al. The

Neuroscience of Implicit Moral Evaluation and Its
Relation to Generosity in Early Childhood, *Current
Biology* (2015). DOI: [10.1016/j.cub.2014.11.002](https://doi.org/10.1016/j.cub.2014.11.002)

Provided by University of Chicago

APA citation: Probing the relationship between brain activity and moral judgments of children (2016, March 9) retrieved 12 June 2022 from <https://medicalxpress.com/news/2016-03-probing-relationship-brain-moral-judgments.html>

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