

Psychologists shed light on origins of morality

February 26 2009

In everyday language, people sometimes say that immoral behaviours "leave a bad taste in your mouth". But this may be more than a metaphor according to new scientific evidence from the University of Toronto that shows a link between moral disgust and more primitive forms of disgust related to poison and disease.

"Morality is often pointed to as the pinnacle of human evolution and development," says lead author Hanah Chapman, a graduate student in the Department of Psychology. "However, disgust is an ancient and rather primitive emotion which played a key evolutionary role in survival. Our research shows the involvement of disgust in morality, suggesting that moral judgment may depend as much on simple emotional processes as on complex thought." The research is being published in *Science* on February 27, 2009.

In the study, the scientists examined facial movements when participants tasted unpleasant liquids and looked at photographs of disgusting objects such as dirty toilets or injuries. They compared these to their facial movements when they were subjected to unfair treatment in a laboratory game. The U of T team found that people make similar facial movements in response to both primitive forms of disgust and moral disgust.

The research employed electromyography, a technique that uses small electrodes placed on the face to detect electrical activation that occurs when the facial muscles contract. In particular, they focused on

movement of the levator labii muscle, which acts to raise the upper lip and wrinkle the nose, movements that are thought to be characteristic of the facial expression of disgust.

"We found that people show activation of this muscle region in all three situations - when tasting something bad, looking at something disgusting and experiencing unfairness," says Chapman.

"These results shed new light on the origins of morality, suggesting that not only do complex thoughts guide our moral compass, but also more primitive instincts related to avoiding potential toxins," says Adam Anderson, principal investigator on the project and the Canada Research Chair in Affective Neuroscience. "Surprisingly, our sophisticated moral sense of what is right and wrong may develop from a newborn's innate preference for what tastes good and bad, what is potentially nutritious versus poisonous."

Source: University of Toronto

Citation: Psychologists shed light on origins of morality (2009, February 26) retrieved 25 April 2024 from <https://medicalxpress.com/news/2009-02-psychologists-morality.html>

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