

Neuroscientists explore how longstanding conflict influences empathy for others

23 January 2012, by Anne Trafton



Graphic: Christine Daniloff

MIT postdoc Emile Bruneau has long been drawn to conflict — not as a participant, but an observer. In 1994, while doing volunteer work in South Africa, he witnessed firsthand the turmoil surrounding the fall of apartheid; during a 2001 trip to visit friends in Sri Lanka, he found himself in the midst of the violent conflict between the Tamil Tigers and the Sri Lankan military.

Those chance experiences got Bruneau, who taught high school science for several years, interested in the psychology of human conflict. While teaching, he also volunteered as counselor for a conflict-resolution camp in Ireland that brought Catholic and Protestant children together. At MIT, Bruneau is now working with associate professor of cognitive neuroscience Rebecca Saxe to figure out why empathy — the ability to feel compassion for another person's suffering — often fails between members of opposing conflict groups.

“What are the psychological barriers that are put up between us in these contexts of intergroup conflict, and then, critically, what can we do to get past them?” Bruneau asks.

Bruneau and Saxe are also trying to locate patterns of brain activity that correlate with empathy, in hopes of eventually using such measures to determine how well people respond to reconciliation programs aimed at boosting empathy between groups in conflict.

“We’re interested in how people think about their enemies, and whether there are brain measures that are reliable readouts of that,” says Saxe, who is an associate member of MIT’s McGovern Institute for Brain Research. “This is a huge vision, of which we are at the very beginning.”

Before researchers can use tools such as magnetic resonance imaging (MRI) to evaluate whether conflict-resolution programs are having any effect, they need to identify [brain regions](#) that respond to other people’s emotional suffering. In a study published Dec. 1 in *Neuropsychologia*, Saxe and Bruneau scanned people’s brains as they read stories in which the protagonist experienced either physical or emotional pain. The brain regions that responded uniquely to emotional suffering overlapped with areas known to be involved in the ability to perceive what another person is thinking or feeling.

Failures of empathy

Hoping to see a correlation between empathy levels and amount of activity in those brain regions, the researchers then recruited Israelis and Arabs for a study in which subjects read stories about the suffering of members of their own groups or that of conflict-group members. The study participants also read stories about a distant, neutral group — South Americans.

As expected, Israelis and Arabs reported feeling much more compassion in response to the suffering of their own group members than that of members of the conflict group. However, the brain scans revealed something surprising: Brain activity in the areas that respond to emotional pain was identical when reading about suffering by one's own group or the conflict group. Also, those activity levels were lower when Arabs or Israelis read about the suffering of South Americans, even though Arabs and Israelis expressed more compassion for South Americans' suffering than for that of the conflict group.

Those findings, published Jan. 23 in *Philosophical Transactions of the Royal Society: Biological Sciences*, suggest that those brain regions are sensitive to the importance of the opposing group, not whether or not you like them.

Joan Chiao, an assistant professor of psychology at Northwestern University, says those brain regions may be acting as a "thermometer" for [conflict](#). "It's a really fascinating study because it's the first to examine the neural basis of people's behavior in longstanding conflicts, as opposed to groups that are distant and don't have a long history of intergroup strife," says Chiao, who was not involved in the research.

However, because the study did not reveal any correlation between the expression of empathy and the amount of [brain activity](#), more study is needed before MRI can be used as a reliable measure of empathy levels, Saxe says.

"We thought there might be brain regions where the amount of activity was just a simple function of the amount of empathy that you experience," Saxe says. "Since that's not what we found, we don't know what the amount of activity in these brain regions really means yet. This is basically a first baby step, and one of the things it tells us is that we don't know enough about these brain regions to use them in the ways that we want to."

Bruneau is now testing whether these brain regions send messages to different parts of the brain depending on whether the person is feeling empathy or not. He hypothesizes that when

someone reads about the suffering of an in-group member, the brain regions identified in this study send information to areas that process unpleasant emotions, while stories about suffering of a conflict-group member activate an area called the ventral striatum, which has been implicated in *schadenfreude* — taking pleasure in the [suffering](#) of others.

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Provided by Massachusetts Institute of Technology

APA citation: Neuroscientists explore how longstanding conflict influences empathy for others (2012, January 23) retrieved 21 October 2021 from <https://medicalxpress.com/news/2012-01-neuroscientists-explore-longstanding-conflict-empathy.html>

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