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# Why cooperate? It's a pleasure, says Emory study

David Wahlberg - Staff  
Thursday, July 18, 2002

Rush-hour drivers, take note: It feels good to let a car in ahead of you.

Science says so.

The pleasure centers of the brain that respond to drugs, alcohol and physical attraction also light up when people cooperate, according to Emory University researchers whose findings are in today's issue of the journal *Neuron*.

In their study, 36 women played the non-zero-sum game "Prisoner's Dilemma" while getting functional magnetic resonance imaging scans, a new type of MRI that shows a movie of brain activity.

The game is named for a scenario in which two people are arrested for the same crime and questioned individually by cops who don't have enough evidence for conviction on a serious charge; one who offers dirt on the other will be released. If both clam up, each faces conviction for a lesser offense. If one rats, he goes free while the other gets full prison time. If both talk, each gets minimal punishment.

In Emory's version, the women pressed buttons with the words "cooperate" or "defect." If both cooperated, each got \$2. If both defected, each got \$1. If they split, the one who defected got \$3 and other got nothing.

Mathematician John Nash's Nobel Prize-winning theory, noted in the movie "A Beautiful Mind," is that anyone facing the dilemma is wise not to cooperate, as that's the only sure way to gain something.

Yet the women in Emory's study were prone to cooperate, and their MRI scans suggest why: Cooperation activates four brain regions known for "reward

processing," and this apparently overrides other temptations to be selfish.

Believe it or not, humans are hot-wired to put their heads together, the researchers say.

"We are biologically programmed to associate cooperative social interactions as rewarding," said Dr. Gregory Berns, an Emory associate professor of psychiatry who co-directed the study.

"Maybe it's genetically that way, or maybe it's acquired through socialization during childhood and adolescence," he said.



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Lions, chimpanzees and other animals who sometimes hunt together or share food are often in the same families, so their generosity may be generated more by their genes than by their brains.

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The findings could pave the way for more studies of anti-social behavioral disorders such as autism and drug addiction.

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Making room for another car in a traffic jam is one way that people are predisposed to collaboration, Berns said. But those who don't aren't necessarily pleasure-deficient. "I think it just means they're having a bad day," he said.

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As for having only women in the study, it's not because they're better at cooperating, Berns added.

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"They tend to volunteer more for studies," he said.

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