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Why we're nice: the feel-good factor

Natalie Angier The New York Times
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NEW YORK What feels as good as chocolate on the tongue or money in the bank, but won't make you fat or risk a subpoena from the Securities and Exchange Commission? Hard as it may be to believe in these days of infectious greed and sabers unsheathed, scientists have discovered that the small, brave act of cooperating with another person, of choosing trust over cynicism, generosity over selfishness, makes the brain light up with quiet joy.

Studying neural activity in young women who were playing a classic laboratory game called the Prisoner's Dilemma, in which participants can select from a number of greedy or cooperative strategies, researchers found that when the women chose mutualism over "me-ism," the mental circuitry normally associated with reward-seeking behavior swelled to life.

And the longer the women engaged in a cooperative strategy, the more strongly flowed the blood to the pathways of pleasure.

The researchers, performing their work at Emory University in Atlanta, used magnetic resonance imaging to take what might be called portraits of the brain on hugs.

"The results were really surprising to us," said Gregory Berns, a psychiatrist and an author on the new report, which appears in the current issue of the journal *Neuron*. "We went in expecting the opposite." The researchers had thought that the biggest response would occur in cases where one person cooperated and the other defected, when the cooperator might feel that she was being treated unjustly. Instead, the brightest signals arose in cooperative alliances and in those neighborhoods of the brain already known to respond to desserts, pictures of pretty faces, money, cocaine and any number of licit or illicit delights.

"It's reassuring," Berns said. "In some ways, it says that we're wired to cooperate with each other."

The study is among the first to use MRI technology to examine social interactions in real time, as opposed to taking brain images while subjects stared at static pictures or thought-prescribed thoughts.

It is also a novel approach to exploring an ancient conundrum, why are humans so, well, nice? Why are they willing to cooperate with people they barely know and to do good deeds and to play fair a surprisingly high percentage of the time?

Scientists have no trouble explaining the evolution of competitive behavior. But the depth and breadth of human altruism, the willingness to forgo immediate personal gain for the long-term common good, far exceeds behaviors seen even in other large-brained highly social species like chimpanzees and dolphins, and it has as such been difficult to understand.

"I've pointed out to my students how impressive it is that you can take a group of young men and women of prime reproductive age, have them come into a classroom, sit down and be perfectly comfortable and civil to each other," said Peter Richerson, a professor of environmental science and policy at the University of California at Davis and an influential theorist in the field of cultural evolution. "If you put 50 male and 50 female chimpanzees that don't know each other into lecture hall, it would be a social explosion."

Ernst Fehr of the University of Zurich and colleagues recently presented findings on the importance of punishment in maintaining cooperative behavior among humans and the willingness of people to punish those who commit violate norms, even when the chastisers take risks and gain nothing themselves while serving as ad hoc police.

Assuming that the urge to cooperate is to some extent innate among humans and reinforced by the brain's feel-good circuitry, the question of why it arose remains unclear. Anthropologists have speculated that it took teamwork for humanity's ancestors to hunt large game or gather difficult plant foods. So the capacity to cooperate conferred a survival advantage on our forebears.

Yet as with any other trait, the willingness to abide by the golden rule and to be a good citizen, and not cheat and steal from one's neighbors, is not uniformly distributed.

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