EXPLAIN THIS

Fairness is emotionally rewarding, a study finds

A fair deal activates parts of the brain also stimulated by earning money, looking at attractive faces or eating chocolate, UCLA researchers find.

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What’s new: The sinking feeling that creeps in after you’ve paid too much for a house, car or new pair of shoes may actually be a hard-wired, neurological response to being treated unfairly.

On the flip side, getting a fair deal on that same car or pair of shoes stimulates parts of the brain associated with reward and happiness.

The finding: Researchers at UCLA’s Semel Institute for Neuroscience and Human Behavior recently reported in the journal Psychological Science that getting a fair deal activated the same parts of the brain -- the ventral striatum, the amygdala and the ventromedial prefrontal cortex, together known as the reward circuit -- that are stimulated by earning money, looking at attractive faces or eating chocolate (in those who like the stuff).

Lead study author Golnaz Tabibnia, a postdoctoral researcher in the department of psychiatry and biobehavioral sciences, said the findings suggest people care about fairness itself not just because unfairness is unpleasant, but because fairness generates positive emotions. Fairness, in and of itself, she said, is emotionally rewarding -- regardless of how much money may come (or go) in the deal.

How the study was done: The researchers conducted two separate experiments. In both, the study subjects, all UCLA students, played a so-called ultimatum game in which a person called a “proposer” offered to split with them a certain amount of money, say $10. Sometimes the proposer would offer to split the money in half (a fair deal), at other times he or she would offer less than half. If the student accepted, proposer and student kept the money. If the student rejected the offer, proposer and student walked away with nothing.

In the first experiment, the 29 students who played the game were asked to report how happy or upset they were about each offer. In the second experiment, 12 students played the game while their brain activity was monitored using functional magnetic resonance imaging, or fMRI. The fMRI measures changes in blood flow to different regions of the brain, indicating which parts of the brain are more or less active.

When students were offered $5 out of $10, they’d typically accept the offer -- and their reward circuitry would light up. When offered, say, $2, roughly half the students rejected the money, and their brain region associated with disgust would light up. In the half that accepted the meager offer, their disgust region wasn’t activated, but neither was their reward circuitry -- instead, the part of the brain that came into play was the region involved in self-control. “It’s the neural pattern of what swallowing your pride looks like,” Tabibnia said.

Why it matters: Essentially, the results bolster the maxim that money doesn’t buy happiness. No matter how much money people make, or lose, in a deal, what determines how they feel at the end of the day, the study suggests, is how fairly they think they’ve been treated. “Certainly money is rewarding,” Tabibnia said. “But more and more research is suggesting that our social relations with other people can also be rewarding, and can be very strong determinants of our happiness and satisfaction.”

What we still don’t know: Scientists think -- but aren’t sure -- that emotional responses to fair or unfair treatment could differ based on gender, cultural background or socioeconomic status. Being poor, for example, conceivably could build tolerance to unfair treatment -- but the idea is pure conjecture.

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