

Are we genetically programmed to be generous? Israeli scientists say yes

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Are those inclined towards generosity genetically programmed to behave that way? A team of researchers, including Dr. Ariel Knafo of the Psychology Department at the Hebrew University of Jerusalem, believes that this could very well be the case.

Through an online task involving making a choice whether or not to give away money, the researchers found that those who chose to give away some or all of their money differed genetically from those involved in the exercise who chose not to give their money away.

The scientists conducted the experiment with 203 online "players". Each player could choose to keep the equivalent of \$12 he was allocated, or to give all or part of it to an anonymous other player.

Those involved also provided DNA samples which were analyzed and compared to their reactions. It was found that those who had certain variants of a gene called AVPR1a gave on average nearly 50 percent more money than those not displaying that variant. The results of the study were published online recently in the research journal *Genes, Brain and Behavior*.

"The experiment provided the first evidence, to my knowledge, for a relationship between DNA variability and real human altruism," said Knafo, who conducted the research along with other researchers, including Prof. R. P. Ebstein, Prof. Gary Bornstein, and Salomon Israel of the Psychology Department at the Hebrew University of Jerusalem.

The gene AVPR1a codes for the production of a receptor that enables a hormone, arginine vasopressin, to act on brain cells. Vasopressin, in turn, has been implicated in social bonding. The researchers found greater altruism in players in which a key section of the AVPR1a gene, called its promoter, was longer. The promoter is the region of a gene that allows cellular machinery to bind to it and determine how much gene product is made. In the case of this gene, a longer promoter can result in greater activity.

The findings could help biologists sort out altruism's evolutionary history, according to the scientists. They noted that a version of AVPR1a also exists in rodents called voles, where it also promotes social bonding. This suggests that altruism has a long rooted genetic history, which may have taken on a new role during human evolution.

Source: The Hebrew University of Jerusalem

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