

Research suggests cooperative behaviour is not instinctive, but learned

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Cooperative behaviour is not an instinctive impulse or deliberate choice, but a learning process. Researchers of CWI and LUISS Guido Carli in Rome showed in an experiment that people living in a low-trust society intuitively choose non-cooperation in games. However, after playing several times their intuitive choices become more cooperative. The results are published in the *Proceedings of the Royal Society B* on Wednesday 8 July.

The human ability to cooperate with strangers is an evolutionary puzzle. In most [animal species](#), cooperation is only observed among kin or in very small groups where future interactions are likely. To explore the nature of [cooperative behaviour](#), the researchers compared decision-making in economic games between high-trust and low-trust societies.

Prisoner's dilemma

The researchers let 449 participants from India, a society that ranks very poor in corruption and cronyism indices, play a variant of the Prisoner's Dilemma game. Two participants who were unable to communicate, were given a small sum of money and were told that they could either keep it, or transfer some to the other person who would then receive double that amount. Transferring money is potentially rewarding, but only if both decide to transfer. The participants were selected through Amazon Mechanical Turk and tested on their understanding of the game.

The researchers found that Indians transferred far less money (28% on average) than their American counterparts did in previous experiments (52% on average), both under time pressure (intuitive decision) and with a reflection period (deliberate decision). Researcher Valerio Capraro of CWI's Networks & Optimization group says: "These results are hard to explain by either demographics or methodological differences between the experiments. It therefore seems likely that choices whether to cooperate with strangers are based on exposure to either cooperative or non-cooperative actions in everyday life. In a high-trust society like the USA cooperative strategies might be successful, whereas non-cooperative behaviour might be the best choice in India."

However, there were also differences between Indian participants. Those who had previously played games like these, were more likely to cooperate under time pressure. "We show that cooperative behaviour can be learned, and that this is mostly an intuitive reaction," says Capraro. "Our subjects tended to abandon their default, non-cooperative strategy and start to cooperate". Understanding the mechanisms underlying the emergence of cooperation from a non-cooperative setting is a topic of major interest for future research.

Economic interactions

"Cooperation is fundamental to the success of personal and professional relationships as well as economic interactions.", Giorgia Cococcioni (LUISS Guido Carli), says. "For instance, if several companies need the same raw material for their product, they will benefit from a joint purchase order. This lower production costs would benefit both company and consumer, but to achieve this the companies need to trust each other."

The researchers stresses that individual histories and the societal context should be taken into account to be able to really understand how people cooperate with each other. Capraro: "We need more flexible models that realize that people can learn to be cooperative in specific contexts. It is for instance very possible that our experiment will give very different results in a few decades, if the Indian government is successful in its fight against corruption."

More information: "Social Setting, Intuition, and Experience in Lab Experiments Interact to Shape Cooperative Decision-Making (June 9, 2015)." *Proceedings of the Royal Society B: Biological Sciences*. Available at SSRN: ssrn.com/abstract=2559182 or dx.doi.org/10.2139/ssrn.2559182

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