

# New Study Eyes Evolution of Fairness and Punishment

March 18 2010

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(PhysOrg.com) -- Researchers have long been puzzled by large societies in which strangers routinely engage in voluntary acts of kindness, respect and mutual benefit even though there is often an individual cost involved.

While evolutionary forces associated with kinship and [reciprocity](#) can explain such [cooperative behavior](#) among other primates, these forces do not easily explain similar behavior in large, unrelated groups, like those that most humans live in.

A new study co-authored by University of California, Davis, [anthropologist](#) Richard McElreath and published today in *Science* magazine suggests that the cooperative nature of each society is at least partly dependent upon historical forces - such as [religious beliefs](#) and the growth of market transactions.

The study also found the extent to which a society uses punishment to enforce norms increases and decreases with the number of people in the society.

"It is likely that small and large communities regulate cooperation - mutual defense, conservation, etc. - in different ways, because different mechanisms of monitoring and enforcement of norms work better at different scales of society," explained McElreath, an associate professor of anthropology at UC Davis.

"A small town in Kansas, for example, can likely rely upon [reputation](#) and the fact that everyone knows everyone else, while the residents of New York City need some mechanism, like punishment, that can work in the absence of reliable reputations," he said.

McElreath was one of 14 researchers on three different continents who participated in the project detailed in the paper, "Markets, Religion, Community Size, and the Evolution of Fairness and Punishment." The first author is Joseph Henrich, an associate professor in the departments of Psychology and Economics at the University of British Columbia.

The researchers probed why communities often cooperate in diverse ways, from mutual defense to conservation. People engage in such mutually beneficial acts even though they may be individually costly.

Using behavioral experiments administered across 15 diverse populations, the study sought to measure the influence of three different mechanisms - punishment, market integration and religious beliefs - that might maintain cooperation within societies. Market integration is the extent to which individuals use anonymous, rule-governed transactions to buy and sell goods.

The researchers found that overt punishment, religious beliefs that can act as a form of psychological [punishment](#) and market integration each were correlated with fairness in the experiments.

Provided by University of California - Davis

Citation: New Study Eyes Evolution of Fairness and Punishment (2010, March 18) retrieved 19 April 2024 from <https://phys.org/news/2010-03-eyes-evolution-fairness.html>

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