

How reputation could save the Earth

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HAVE you ever noticed a friend or neighbour driving a new hybrid car and felt pressure to trade in your gas guzzler? Or worried about what people might think when you drive up to the office in an SUV? If so, then you have experienced the power of reputation for encouraging good public behaviour. In fact, reputation is such an effective motivator that it could help us solve the most pressing issue we face - protecting our planet.

Environmental problems are difficult to solve because Earth is a "public good". Even though we would all be better off if everyone reduced their environmental impact, it is not in anyone's individual interest to do so. This leads to the famous "tragedy of the commons", in which public resources are overexploited and everyone suffers.

Public goods situations crop up all over the place, including decisions on maintaining roads, funding the police and whether or not to shirk at work. This leads us to an important question: is it possible to make people care enough about such problems to do their bit? To help answer this, researchers have developed a representation of such situations called the public goods game. The results give cause to believe that the tragedy of the commons can be overcome.

In the public goods game, each player is given a sum of money, say \$10. They then choose how much to keep and how much to anonymously contribute to a common pool. Contributions are multiplied by some factor (less than the number of players) and then split equally among all players. If everyone contributes, the payout is higher. But making a contribution is costly, and causes you to end up worse off than if you did not contribute.

Imagine, for example, four people playing a game in which contributions are doubled. If everyone contributes their \$10, they all end up with \$20. But a player who refuses to contribute while the others put in the full amount ends up with \$25 while the rest get \$15 each. If only one player contributes their \$10, they end up with just \$5 and everybody else \$15. The self-interested thing to do, therefore, is never to contribute.

When the public goods game is played in the lab, most people usually begin by contributing a large amount, trying to do their part towards maximising the group's earnings. Some people, however, decide to take a slice of the profits without contributing. Over time this free-riding undermines the others' willingness to pay and the average contribution decreases. This results in significantly lower earnings all round, recreating the tragedy of the commons.

The public goods game gives us an opportunity to explore interventions that encourage cooperation. Experiments have shown, for example, that making each player's contribution public can sustain contributions at a high level. It appears that the benefit of earning a good name outweighs the costs of doing your part for the greater good, and even selfish people can be motivated to care. It is worth contributing in order to protect your standing in the community.

Out in the real world, these experiments suggest a way to help make people reduce their impact on the environment. If information about each of our environmental footprints was made public, concern for maintaining a good reputation could impact behaviour. Would you want

your neighbours, friends, or colleagues to think of you as a free rider, harming the environment while benefiting from the restraint of others?

The power of reputation is already being harnessed to protect the environment. Hybrid cars such as the Toyota Prius have recognisable designs, advertising their driver's commitment to cleaner energy for all to see. Some energy companies give green flags to customers who choose to pay extra for energy from a more environmentally friendly source, allowing people to openly display their green credentials. Similarly, individuals who volunteer in environmental clean-up days receive T-shirts advertising their participation.

Tokens such as these serve a dual purpose. First, they allow those who contribute to reap benefits through reputation, helping to compensate them for the costs they incur. Secondly, when people display their commitment to conservation, it reinforces the norm of participation and increases the pressure on free riders. If you know that all of your neighbours are paying extra for green energy or volunteering on a conservation project, that makes you all the more inclined to do so yourself.

When people display their commitment to conservation, it ups the pressure on free riders. Even better than voluntary displays would be laws enforcing disclosure. For example, governments could require energy companies to publish the amount of electricity used by each home and business in a searchable database. Likewise, gasoline use could be calculated if, at yearly inspections, mechanics were required to report the number of kilometres driven. Cars could be forced to display large stickers indicating average distance travelled, with inefficient cars labelled similarly to cigarettes: "Environmentalists' warning: this car is highly inefficient. Its emissions contribute to climate change and cause lung cancer and other diseases." Judging from our laboratory research, such policies would motivate people to reduce their carbon footprint.

Although laws of this kind raise possible privacy issues, the potential gains could be great. In a world where each of us was accountable to everybody else for the environmental damage we cause, there would be strong incentives to reduce the energy we use, the carbon dioxide we emit and the pollution we create. In such a world, we might be able to avert a global tragedy of the commons.

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