

How communities effectively punish antisocial behaviour

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The research identifies the group dynamics employed to tackle wrongdoing. Credit: iStock/Rafal Dudzic

(Phys.org) —New research provides an insight into how groups of people tackle social dilemmas and effectively punish those engaging in anti-social behaviour.

[Neighbours](#) playing loud music is an example of where a [social dilemma](#) can arise about who should tackle the wrong-doer if a whole group of people is affected. If everyone expects someone else to punish the wrongdoer, the loud music will persist. However, research by the University of Oxford and the ETH Zurich has revealed that when a group can identify a strong member from amongst themselves, it is more likely that this results in a tacit agreement about who should punish the wrongdoer.

By contrast, when a group finds it hard to identify which of their members is the strongest, the wrongdoer is less likely to be deterred, say the findings published online in the *Proceedings of the Royal Society B*.

In a laboratory experiment, the researchers involved 120 [volunteers](#), divided into groups of four, to play games with money tokens. Each player was given a bank of 140 money tokens with one of the four randomly assigned as the cheat. The cheat could decide whether to refrain from

cheating and gain nothing, or risk cheating to potentially gain 70 tokens from each of the three [players](#). The three players had to decide independently whether to challenge the cheat to reclaim the money for themselves, as well as the other players – the snag being that the challenge would entail a monetary cost to the challenger while the free-riding players would retrieve the full 70 tokens. However, if none of the players challenged the cheat, the cheat would keep their tokens and get away with it.

First, the cost for the player challenging the cheat was set at 30 tokens, meaning that player could only claim 40 tokens while a free-rider received back 70 tokens. In this set of games, about one-third (35 per cent) of the players challenged the cheat to reclaim the money, despite the cost to themselves.

A marked change in the pattern emerged, however, when the costs to the challengers were made slightly unequal. While two of three players would lose 40 tokens for challenging the cheat, the other one of the three would only lose 30 tokens. In these games, a tacit agreement set in that the strongest of them, i.e. the player with the least to lose, should challenge the cheat, even though the differences in the monetary strengths of the players were only small. The researchers also varied the size of the penalty that would be imposed on the cheat to assess what role this played to stop cheating behaviour.

They found that in groups with a strong player, money tokens were reclaimed from the cheat by the strong player in 83 per cent of cases. What is more, when the penalty for cheating was increased from 0 to 40 penalty points, this resulted in a substantial reduction of cheating in groups with a strong player; a reduction as high as in groups with all equal players where the penalty for cheating was increased from 0 to 120 penalty points.

Surprisingly perhaps, the researchers discovered that when the wrongdoer knew that there was a strong player in the group and the risk of punishment was therefore high, this proved to be as effective a deterrent as monetary penalties three times higher in groups with players of equal strength.

Co-author Dr Wojtek Przepiorka, from the Department of Sociology at the University of Oxford, said: 'Our findings help us understand how social order was possible in human prehistory, where official law enforcement bodies did not exist. It suggests that the natural order was for groups where someone was marked out as the strongest would be more likely to challenge the wrongdoer. The idea of who was strongest would have varied according to the society's norms and culture: it could be body size, wealth, valour or other endowments.'

'Interestingly this certainty of being punished can be a stronger deterrent than the size of the penalty itself. This is also informative of cooperative behaviour amongst members of a community and indicates how social norms may have developed.'

Andreas Diekmann, Professor of Sociology at ETH Zurich, who also authored the study, said: 'It is important to learn more about how social order has emerged in human groups without third party intervention. In contrast to previous studies, with our experiment we were able to demonstrate that it is possible to solve cooperation problems without assuming individuals with punitive preferences. A very small degree of inequality amongst the group members is enough to make the punishment of wrongdoers more likely and this has a deterrent effect. As a result, antisocial behaviour is reduced substantially even though punishment is rarely exercised.'

More information: rspb.royalsocietypublishing.org/doi/10.1098/rspb.2013.0247

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