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Why sadists are so useful

Terence Kealey: Science Notebook

We scientists are kindly creatures, anxious to see only the best in our fellows. Consider a recent paper in *Science* magazine entitled “Via Freedom to Coercion: The Emergence of Costly Punishment”. The study was led by Christoph Hauert, of Harvard University.

The problem of punishment is simple. Imagine a tribe of hunter-gatherers. Imagine that all the men are brave and that they share equally in the risks of the hunt. Now imagine that one of those men is actually a creep, hiding behind a tree while the risks are being taken, and slipping out to grab a share of the food only after the beast is safely dead.

Food for no risk is a good deal, so in time other men would learn that it was better to shirk than to hunt. Before long all the men would be shirking and the men would rapidly be reduced to eating the berries that their wives had gathered.

The way to avoid this development is to punish the shirkers. Evolutionary biologists have constructed mathematical models to show how many punishers a population needs to deter shirkers. Unfortunately these theoretical solutions have passed the problem on to the punishers, because punishers soon become unpopular. So – wanting to be loved – the public-spirited punishers in turn will shirk their task. We appear to be back where we started, with shirkers going uncorrected.

But in their paper Hauert and his colleagues have shown, mathematically, that if the initial population of hunters consists solely of volunteers, then there are fewer acts of shirking, so punishers need to punish so rarely as to incur little unpopularity. Consequently punishment is safe, and punishers can emerge in such numbers as to perpetuate themselves – even if the numbers of shirkers were subsequently to rise.

The maths is elegant, but let me offer a different solution: sadism. If punishers enjoyed their work, they would willingly embrace unpopularity – sadism may well have evolved as the reward for taking on the necessary role of punishing others. If, 2,000 years ago, Publilius Syrus could write that “tears gratify a savage nature, they do not melt it”, and Ovid could write that “pleasure is sweetest when ‘tis paid for by another’s pain”, then Hauert need not worry about the social costs of punishment. And sadism is hardly rare. Indeed, Sigmund Freud described it as “the most common and the most significant of all the perversions”.

One interesting aspect of the Hauert paper lies in the workplaces of the four authors: they come from the departments of mathematics, economics, business administration and systems analysis. We are entering a new world in biology – the world of neuroeconomics, where biology is enriched by the tools of the social sciences. Over the next few weeks I shall explore other insights into human nature we have obtained from biomathematics.

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