

The reasons behind crime

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Credit: AI-generated image ([disclaimer](#))

More punishment does not necessarily lead to less crime, say researchers at ETH Zurich who have been studying the origins of crime with a computer model. In order to fight crime, more attention should be paid to the social and economic backgrounds that encourage crime.

People have been stealing, betraying others and committing murder for ages. In fact, humans have never succeeded in eradicating crime,

although – according to the rational choice theory in economics – this should be possible in principle. The theory states that humans turn criminal if it is worthwhile. Stealing or evading taxes, for instance, pays off if the prospects of unlawful gains outweigh the expected punishment. Therefore, if a state sets the penalties high enough and ensures that lawbreakers are brought to justice, it should be possible to eliminate crime completely.

This theory is largely oversimplified, says Dirk Helbing, a professor of sociology. The USA, for example, often have far more drastic penalties than European countries. But despite the death penalty in some American states, the homicide rate in the USA is five times higher than in Western Europe. Furthermore, ten times more people sit in American prisons than in many European countries. More repression, however, can sometimes even lead to more crime, says Helbing. Ever since the USA declared the "war on terror" around the globe, the number of terrorist attacks worldwide has increased, not fallen. "The classic approach, where criminals merely need to be pursued and punished more strictly to curb crime, often does not work." Nonetheless, this approach dominates the public discussion.

More realistic model

In order to better understand the origins of crime, Helbing and his colleagues have developed a new so-called agent-based model that takes the network of social interactions into account and is more realistic than previous models. Not only does it include criminals and law enforcers, like many previous models, but also honest citizens as a third group. Parameters such as the penalties size and prosecution costs can be varied in the model. Moreover, it also considers spatial dependencies. The representatives of the three groups do not interact with one another randomly, but only if they encounter each other in space and time. In particular, individual agents imitate the behaviour of agents from other

groups, if this is promising.

Using the model, the scientists were able to demonstrate that tougher punishments do not necessarily lead to less crime and, if so, then at least not to the extent the punishment effort is increased. The researchers were also able to simulate how crime can suddenly break out and calm down again. Like the pig cycle we know from the economic sciences or the predator-prey cycles from ecology, crime is cyclical as well. This explains observations made, for instance, in the USA: according to the FBI's Uniform Crime Reporting Program, cyclical changes in the frequency of criminal offences can be found in several American states. "If a state increases the investments in its punitive system to an extent that is no longer cost-effective, politicians will cut the law enforcement budget," says Helbing. "As a result, there is more room for crime to spread again."

"Many crimes have a socio-economic background"

But would there be a different way of combatting crime, if not with repression? The focus should be on the socio-economic context, says Helbing. As we know from the milieu theory in sociology, the environment plays a pivotal role in the behaviour of individuals. The majority of criminal acts have a social background, claims Helbing. For example, if an individual feels that all the friends and neighbours are cheating the state, it will inevitably wonder whether it should be the last honest person to fill in the tax declaration correctly.

"If we want to reduce the [crime rate](#), we have to keep an eye on the socio-economic circumstances under which people live," says Helbing. We must not confuse this with soft justice. However, a state's response to crime has to be differentiated: besides the police and court, economic and social institutions are relevant as well – and, in fact, every individual when it comes to the integration of others. "Improving social conditions

and integrating people socially can probably combat [crime](#) much more effectively than building new prisons."

More information: Perc M, Donnay K, and Helbing D. Understanding Recurrent Crime as System-Immanent Collective Behavior, *PLoS ONE* 8(10). e76063. [DOI: 10.1371/journal.pone.0076063](https://doi.org/10.1371/journal.pone.0076063)

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