

## **GAMES PEOPLE PLAY**

### **Big Data Can Help If We Want It To**

Children play ‘cops-and-thieves’ across cultures and continents. All it needs is playmates, without equipment, playgrounds or complicated rules. The game is any day more popular -- and exciting-- than even soccer which is otherwise the king of all plebeian sports. Even the mobile phone games or virtual gaming portals keep inventing newer versions of ‘cops-and-bandits’ because of its inherent appeal! The adventure flows from a simple logic: if there is law, there will be law-breakers who must be booked at any cost!

But the enforcement of law in real-life is no child’s play. For starters, the dividing line is blurred between good guys and bad guys and, as a result, cops and bandits often end up on the same side leaving the rest of us bewildered. To further muddy the waters there is politics, but more of that later.

For now, let us talk about a new amusement for the grownups called game theory and its close cousin, Nash Equilibrium, both part of a branch of mathematics which is immensely popular among law enforcers all over the world. The world is learning that these novel games have serious implications for economic and political processes affecting modern societies. Game theory is being used to create equations and algorithms which can help in better policing, restoration of law and order and in conflict resolution. Nash Equilibrium analyses, simultaneously, the outcomes of strategic interactions among multiple players, such as the law enforcers, law-breakers and the multiple publics.

In policing, game theory helps in minimising delinquencies by predicting and controlling hot spots of crimes. What it has in common with the children’s version of the game is that the two sides keep each other guessing their next moves to avoid being found out. The game has multiple players divided into two sets, let us say, cops and bandits, and both can rationally work out their own risks and benefits. Both are capable of predicting the rivals’ actions and strategies. The permutations and combinations work in ways that one side’s gains become the other side’s losses, making it a zero-sum game in the end.

The police forces, globally, are building algorithms to predict risk profiles of different regions, risk-modelling of terrains and diffusing possible crimes by reducing attractiveness of crime locations. For the violators of the law, the game can be made unattractive real time by ensuring that the risks outweigh benefits rather disproportionately. And to achieve that result, long-term studies and big data are required. Like the children’s game, you need very little equipment except raw data plotted over selected geographies. It is a bit like winning wars without the guns! Well, almost!

The first requirement, obviously, is of robust quality of time-series data and a rigorous study of patterns. For instance, in one such experiment the game theorists split up the city of Irvington, New Jersey, US, into 4,000 cells with each cell accounting for just about everything from incidents of shooting to drug abuse to arrests and gang-based activities.<sup>1</sup> This was used successfully to find best places for the police to allocate resources and to test the effectiveness of its patrolling parties. In India, game theory can tell us the long-term costs of conflicts arising out of hatred, bigotry or injustice. But, sadly, that is where politics begins and the game changes. It is unfortunate that the festering conflicts we want to resolve often come in handy to win elections -- which means social harmony can be bad politics for some (important) players.

Another significant tool of data collection is citizen surveys of policing. These provide snapshots of police-citizen relations which ultimately help in monitoring effectiveness and responsiveness of the forces. This brings us to another problem: We want good data but only as long as it helps the political class in an all-important game called elections. It is a pity, for instance, that we have stopped collecting or disclosing data

about the representation of the minorities in the police even though there is sufficient global evidence to show that diversity helps in civilising the force.

There is no doubt that data works as the first line of diagnostics. The numbers show us the glaring gaps and give us an idea of where to begin. And that is why in some countries public audits are being devised to measure the effectiveness of the prison and the justice system. One such survey conducted by the Vera Institute of Justice, an American institution dedicated to access, safety and fairness of the justice system, tells us that peoples' feelings about police are affected more often by culturally transmitted norms and beliefs rather than by their direct experiences.<sup>2</sup>

We also need robust research to constantly remind us if and why some sections of people are more likely to be arrested and imprisoned than others and if the poor and the vulnerable tend to get harsher sentences. Data shows us the mirror when almost all convicts to be hanged come from the poor and vulnerable sections and if our prisons are overflowing with undertrials of certain communities. Long-term data tells us if our police forces have adequate diversity and what kind of strategies work against prejudices and cynicism on a sustained basis.

Let us face it, fair policing is no rocket science, and, if there is a will there has to be a way. If we can muster the resolve, at least a beginning can be made to break the vicious cycle of questionable practices and interference leading to prejudices, frustration and cynicism. First of all, we need fairness and goodwill and a paramount wish to change things. We have to insulate the police from political interference to make sure that the law is the same for all. We also need a better access to justice for the last person. India would take a giant leap forward if we begin by honestly implementing the seven directives of the Supreme Court issued in 2006 in the *Prakash Singh Vs Union of India* case (see the back page).

Common Cause has been at the forefront of police reforms. We believe that for a common person, police are the most visible face of the state and that the survival of democracy hinges on justice and fair play. In the past we have filed PILs on the subject, participated in drafting of the Model Police Act, and held policy dialogues with stake-holders. Our ongoing project is designed to monitor the impact of the police force on the ground. It seeks to evolve an Annual State of Policing Report based on an all India performance-cum-perception survey in collaboration with our partner Lokniti programme of the Centre for the Study of Developing Societies (CSDS). Supported by Sir Ratan Tata Trust (SRTT), the report is in final stages and will be out in the next few months.

Common Cause recently collaborated with the Indian Police Foundation (IPF) to hold a very special event "Without Fear or Favour..." on the Police Reforms Day, September 22, in which senior police officers from all over India joined senior politicians and jurists to discuss citizen-centric policing. In this issue of Common Cause, we have compiled excerpts of some of these ideas, thoughts and recommendations. We are particularly thankful to IPF Chairman Mr. Prakash Singh and its President Mr. N. Ramachandran who are a source of inspiration for the young Common Cause team. I am sure the views presented in this issue would be thought-provoking for our readers. Please write in to us if you have any comments or suggestions to make.

**-Vipul Mudgal**

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<sup>1</sup>Game Theory Applied to Irvington, NJ, by Bhatru, Doyle, Lee, Manzella and Qu (2008)<https://pdfs.semanticscholar.org/09a5/72a2b2336398e3acd2540d11b21cb2744c95.pdf>

<sup>2</sup>The Use of Citizen Surveys as a Tool for Police Reforms (2000) by Robert C Davis, Vera Institute of Justice