Indian Policeman's Dilemma

Kaushik Majumdar, Indian Statistical Institute, 8th Mile, Mysore Road, Bangalore 560059; E-mail: <u>kmajumdar@isibang.ac.in</u>

While physical, mathematical, chemical, biological, earth and atmospheric sciences are same in the east and the west, the social sciences tend to be different due to the influence of culture which is quite different between orient and occident. Here we will be proposing a game which we would like to call *Indian policeman's dilemma*¹, or IPD. It goes as following:

A wealthy businessman B has violated a law L, conviction under which may attract a prison term. B is so wealthy and influential that the area police chief P, who is from the federal civil service cadre, has to oversee the arrest (B is influential enough to subdue the local police station officers who usually make such arrests). P has two options to book B under L. Subsection 1 of L or L(1) imposes a maximum prison term of six months and after being arrested the accused is eligible for bail right from the police station. On the other hand L(2) imposes a maximum prison term of two years and it is non-bailable in the sense that the bail can be granted by a court only, for which the accused may have to wait till the next morning. In other words, he will have to spend one night in a crowded police lock up with poor amenities. If he can avoid the stigma of being in police custody, taking advantage of his money power and prolonged legal process, chances are very high that he will not be convicted at all, and therefore will never have to go to jail.

Sensing the arrest is inevitable B tries to fix a deal with P. According to the deal, if B is booked under L(1) P's son, who is studying in an expensive private university in the west and having a hard time to arrange the course fee for the next session, will receive a fat scholarship from a trust headed by B. The amount is enough to clear his tuition for the coming session. Of course if B is booked under L(2) P's son receives nothing. He could not qualify for aids from his current university and must take a study loan at high interest to continue. Since both B's son and P's son went to the same (elite) school in the town and have mutually overlapping friend circles this was pretty well known to B.

Only a week ahead of the day of the imminent arrest the ruling party lost the provincial election and the opposition came to power (police is under the control of the provincial government including the federal civil service cadre officers serving in it). In the mean time P's next promotion is due (it happens in time scale). B is a well known fund raiser for the previous ruling party and if he is booked under L(2) P will be offered a glamorous post, which will considerably enhance his status and influence. Alternatively, if B is booked under L(1) P will get a position, although higher than the present one, is widely considered as unattractive. His son's tuition fee for the next session must be cleared within thirty days and the credit situation in his country of residence is positively bad.

¹ Policeman's dilemma refers to the following situation: A devastating fire is engulfing a few vehicles following a road accident. Police and rescuers who have reached the scene realize that not everybody can be saved from being burnt alive despite the best efforts. One motorist who was sure to die in the inferno begged an armed policeman to shoot him so that he could have a less painful death. Euthanasia is illegal, but not killing in such a situation may be inhuman. This is called *policeman's dilemma*.

This type of a situation is more commonplace in India than say, in a country like Denmark. The question is "How to design it as a game?" The answer is not an easy one. It is going to be a complicated game in the backdrop of an eastern society, particularly Indian.

Obviously the number of persons involved in the game is two, but how many players are there? From the point of view of 'rational play' B's freedom to choose from among available strategies is rather limited. If P chooses L(1) B is sure to get bail immediately after the arrest. It is highly unlikely that he would be arrested again until there is a verdict against him by the court and his subsequent bail plea is rejected, chances of which are very slim. So, B does not have to do anything other than following the 'normal procedure'. On the other hand, if P chooses L(2) B will come forward with the deal in the hope that P will go back on his decision and will choose L(1) instead. We find it reasonable to model the game as a one-person game played by P against his environment in which B simply acts as an agent. The other prominent environmental agent is the political party running the government. Following is the payoff matrix of the game in its normal form.

Profession L(1) L(2)

Emotion	Fatherhood	EM_{11}, PF_{11}	EM_{12}, PF_{12}
	Promotion	<i>EM</i> ₂₁ , <i>PF</i> ₂₁	<i>EM</i> ₂₂ , <i>PF</i> ₂₂

P's decision is governed by two competing aspects of his behavior namely, his professionalism (denoted by Profession in the payoff matrix) and emotionality (denoted by Emotion in the payoff matrix). The technical significance of the words profession and emotion is unimportant. Profession and Emotion (of P) are the two players of the game, with Profession has two strategies L(1) and L(2), and the two strategies for Emotion are Fatherhood and (desire of attractive) Promotion. EM_{ij} and PF_{ij} are the payoff values of Emotion and Profession respectively. This is a static (finite) game with incomplete information. The values of EM_{ij} and PF_{ij} , $i, j \in \{1,2\}$ depend on the environment and will have to be estimated by Bayesian method.