

A and B(D,C)-(K,CH)

A and B(D,D)-(RIP, RIP)

Ordering of preferences- $DC > CC > CD > DD$

Rather settle for the sucker's payoff than mutual defection.

If cost is annihilation, then you are ready for unrequited co-operation.

Even if best possible outcome, unilateral defection, the fear of mutual defection makes even the sucker's pay off –mutual co-operation-CC

Even under conditions of anarchy, it is possible to have mutual co-operation as an outcome in some circumstances. When pay-off of mutual defection is annihilation- eg. nuclear weapons, deterrence. Cold War- U.S and Soviet always swerved- doctrine of MAD. Even without central authority, co-operation, but only in case of such a dangerous game.

3. Prisoner's Dilemma- 2 partners in crime. Major crime of murder. Minor crime of armed burglary leading to murder. Caught by police –evidence of minor crime- illegal possession of a weapon. Police takes A and B into separate interrogation chambers. We know of the minor crime, no evidence of the major crime. If you maintain the bond with the other guy, the other one will blame you for the crime- he will sing like a canary. So you must be a rat. Punishment for minor crime- simple imprisonment, for major crime- life imprisonment, sharing the burden- rigorous imprisonment. If one sings- parole. Unless you sing, you get L or P. No communication.

A,B- C,C(S,S)

A,B-C,D(L,P)

A,B-D,C (P,L)

A,B-D,D(R,R)

Ordering of preferences- $DC > CC > DD > CD$

Sucker's pay-off worst. DD –best- mutual defection for fear of life imprisonment, though better to co-operate. If B co-operates better for A to defect; if B defects, better for A to defect. No matter what B does, it is better for A to defect. This is true for B as well. Mutual defection is thus the outcome if the game is structured as a PD, can never have co-operative outcomes. If international politics is one

large prisoner's dilemma- there is no fear of cheating or mutual annihilation but it is simply a better options to defect.

Then how can we have co-operation?

Comparison of PD with Stag-Hunt

Stag-Hunt-CC>DC>DD>CD

P.D- DC>CC>DD>CD

Fear of sucker's pay-off not so strong in staghunt as in P.D. Best pay-off in stag-hunt is mutual co-operation. Other guy is important in stag-hunt.

Chicken- DC>CC>CD>DD

P.D- DC>CC>DD>CD

If the other guy defects, better to co-operate.

Games in which , no matter what the other guy does, mutual co-operation is best. This ideal situation is harmony. CC>CD>DD>DC

Deadlock- the situation if the best pay-off is to defect.

The dilemma in P.D is that though it would mutually help to co-operate, the very structure of P.D makes defection rational. Cost-benefit analysis. Greatest return for minimum benefit. Critical assumption of rationality-does not make sense to co-operate. Unilateral co-operation is the sucker's payoff. Therefore mutual defection is best. How to overcome this inherent problem in the structure of P.D?

If played only once, the result will be D,D.Oye claims that international politics is not a one-shot game. A single state meets another state not just once. Durable institutions. Historical process, PD being played over and over again- an iterated P.D. Then they may choose to co-operate –sucker's payoff. Willingness to take it, the sense of repetition. In one-shot PD- lack of communication. Iterated PD- possibility of communication through previous behaviour and choices.

Axelrod- 'The Evolution of Co-operation' Narrates the computer tournament, which strategy wins in an iterated P.D.-designed by Anatole Rapoport. Tit-for-tat- paying back in kind. If you co-operate, I will co-operate: if you defect, I will co-operate defect. First round- willing to take CD-sucker's pay-off. Second round- do what other side did before. Therefore a co-operative dynamic would come into play. If B had defected, first time, one more time co-operate. Then defect till other side co-operated. Not holding grudges-cold-blooded rationally. Not altruistic but egoistic strategy, to get CC rather than DD. Therefore the evolution of co-operation over time. But not willing to take the sucker's pay-off more than a couple of times. Will not get co-operation, as it is a lesser pay-off than mutual defection. The highest pay-off for your self is the aim.

In iterated P.D , it pays to co-operate, highest pay-off. Eg. Indo-Pak relations. To make concessions a couple of times, but continuous concessions leads to the sucker's payoff. Kashmir- unrequited co-operation on the part of India.

3 strategies to attain co-operation under anarchy.

1. Pay-off structure- You can try to change pay-offs in a manner which makes it better to mutually co-operate. PD converted into a stag-hunt. States willing to risk more in terms of taking on the sucker's pay-off. Incentive for co-operation is much more in stag-hunt. Only other option-chicken- which is a very dangerous strategy.
2. Shorter game-greater likelihood of defection. Longer game-greater likelihood of co-operation. No end in sight in International Politics. 'Shadow of the future' like the shadow of the past. Expectations about events in the future will influence your strategies, choices and policies today. One can create conditions propitious for co-operation under anarchy, if you extend the shadow of the future. Larger shadow of future- greater inducement for mutual co-operation.
3. Number of players in the game- Significant finding. Possibility of co-operation reduces as number of players increases. Iterated P.D-More sides, more confusing signals. Therefore Kashmir- better as a bilateral issue. Cancun collapses because of the large number of actors.