

Game Theory Scenarios

Prisoner's Dilemma

Two criminals are arrested and each accused of being accomplices in a major crime and a minor crime. The prosecutors don't have enough hard evidence to convict either of them of the major crime, but they do have enough to convict both of them of the lesser charge. To get one of the prisoners to confess, the prosecutors isolate the two prisoners from each other and tell them they have evidence to convict them of the lesser charge, but they'll drop both the lesser and major charges if they confess to the major crime and implicate the other prisoner in the major crime. The choices the prisoners could make are to remain silent or confess to the major crime.

Chicken

Two motorcyclists are in a competition to see who's the bravest. They get on their motorbikes facing each other at a far distance and begin accelerating to extremely high velocities directly towards each other. As the two motorcyclists approach each other, the choices they could make are to continue accelerating forwards or to swerve to the side (thus losing the competition and admitting they are the "chicken").

Hawk-Dove Model

Two animals of the same species are in conflict over natural resources that they need to survive. The choices they could make are to act like a "hawk", that is, be extremely aggressive and tend towards direct violent conflict to obtain resources, or to act like a "dove", that is, be pacifistic, avoid direct conflict, and find other ways to obtain resources besides winning direct conflicts.