SCHÜLERCAMPUS 2014

GOETHE UNIVERSITÄT FRANKFURT AM MAIN

Wirtschaftswissenschaften: Strategy & Games
An Introduction into Strategic Decision Making

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Utility: economic happiness and satisfaction
Rationality: maximizing your utility by being able to pick up what's best for you and always anticipating the actions of others

Prisoner's Dilemma: Two people have been arrested for committing a crime but there is no substantial evidence. They have no possibilty of talking to each other, and of knowing what the partner is doing. So they have the two options to either to cooperate with their partner or to defect.
In case they both cooperate they will get one year in prison each. If partner A defects, and partner B cooperates, partner A will be discharged from prison, partner B though will be sent to prison for the full ten years. This will happen to partner A in case he cooperates and partner B defects. If both partners defect, each of them will be imprisoned for five years. The dilemma of each prisoner is now to find the right balance between cooperation and competition. He needs to estimate what the partner will do, and decide whether he can trust his partner or not.
This is exactly what firms have to consider when making business decisions.

PRISONER'S DILEMMA
C=cooperate   D=defect (don't cooperate)

	C	D
C	-1,-1	-10,0
D	0,-10	-5,-5

I know what's best for me.
I know what's best for you.
I know that you know what's best for you.
I know that you know what's best for me.
I know that you know that I know what's best for me.
I know that you know that I know what's best for you.
I know that you know that I know that you know what's best for me.
I know that you know that I know that you know what's best for you.
I know....

players   rules
consequences   payoffs

Practical Use at the Strategic Simulator:
Two firms are playing against each other. The aim is to make the maximum profit. According to that you have to anticipate the decisions of your opponent. By changing the following parameters you influence the development of your firm. The possible variables are the capacity, the price of your product, the production cost, marketing and research & development (R&D).
With the help of a computer program we simulated the development of our firm. We tried our best to maximize the profit by acting like real business men.

John Nash
*13.06.1928
age 86
…is a mathematician who invented the game theory.
1994: Nobel Prize in Economic Science
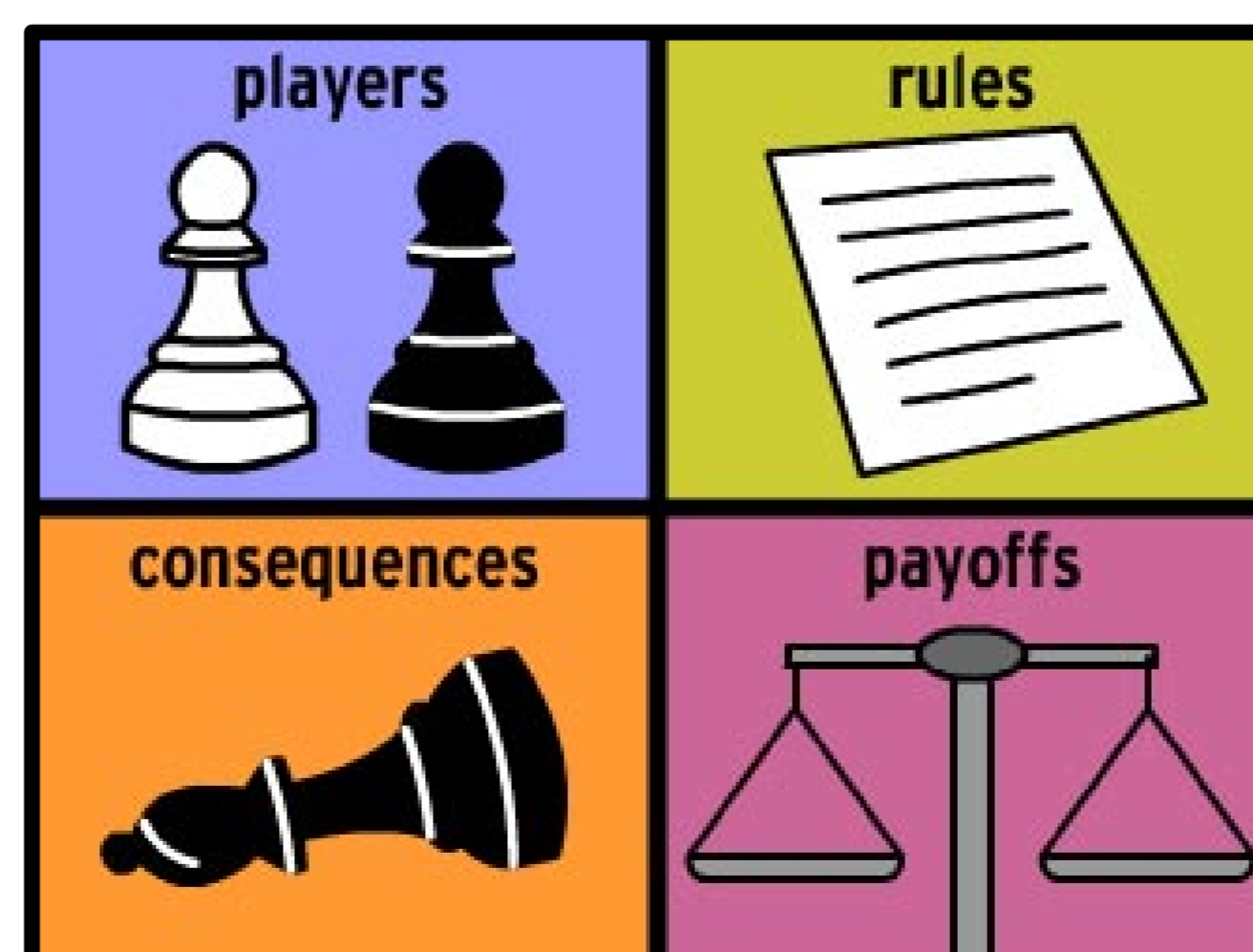
Nash Equilibrium: best set of decisions where both players do not change their strategy, no matter whether they know the opponent's strategy or not, but always choose the most profitable strategy just for themselves

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