Nash equilibrium

Definition: A Nash equilibrium is a strategy profile such that each player's strategy is an optimal response to the other players' strategies

In short, a Nash equilibrium is a strategy (i.e. action) from which no individual player can deviate (i.e. change action) unilaterally (i.e. on his own) and gain higher reward.

The prisoner's dilemma

	B1	B2
A1	(3, 3)	(0, 4)
A2	(4, 0)	**(1, 1)**

Nash equilibrium?

BoS: music version

	Bach	Stravinsky
Bach	**(2, 1)**	(0, 0)
Stravinsky	(0, 0)	**(1, 2)**

Nash equilibrium?

Coordination game

	Mozart	Mahler
Mozart	**(2, 2)**	(0, 0)
Mahler	(0, 0)	**(1, 1)**

Nash equilibrium?

Matching pennies

	Heads	Tails
Heads	$(1, -1)$	$(-1, 1)$
Tails	$(-1, 1)$	$(1, -1)$

Nash equilibrium?

Battle of the sexes

		Wife	
		football	ballet
Husband	football	(2, 1)	(0, 0)
	ballet	(0, 0)	(1, 2)

There are two Nash equilibria: **football-football** and **ballet-ballet**