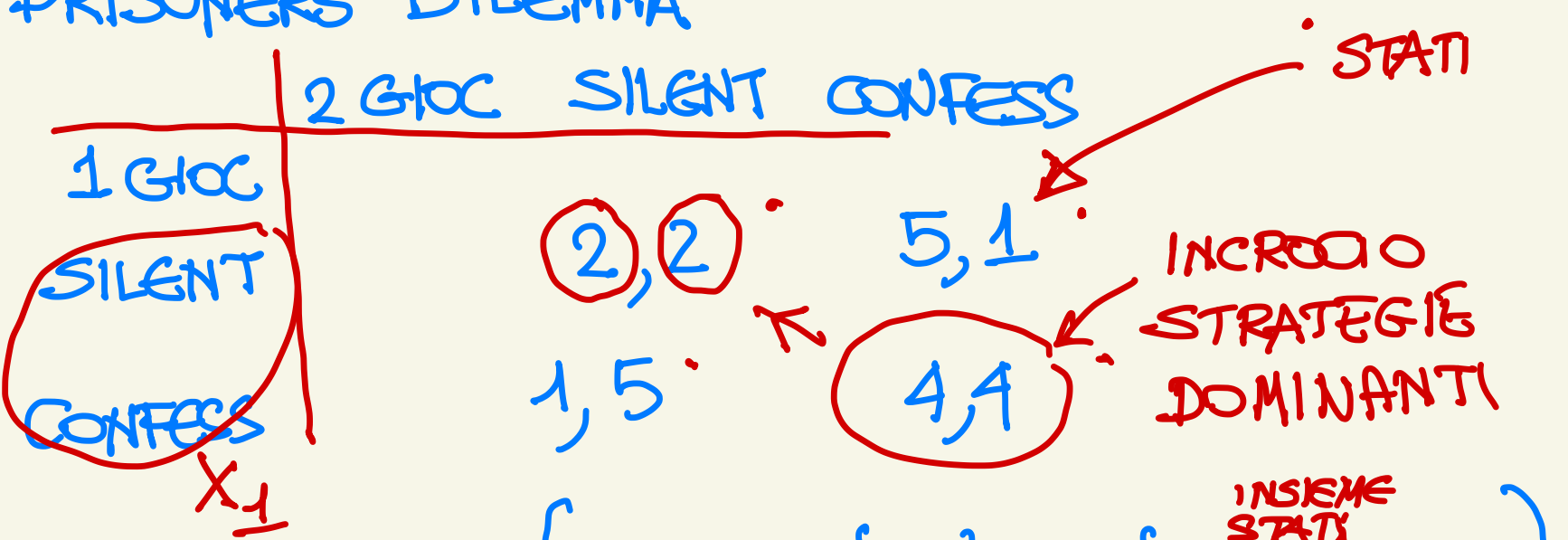
PRISONERS' DILEMMA



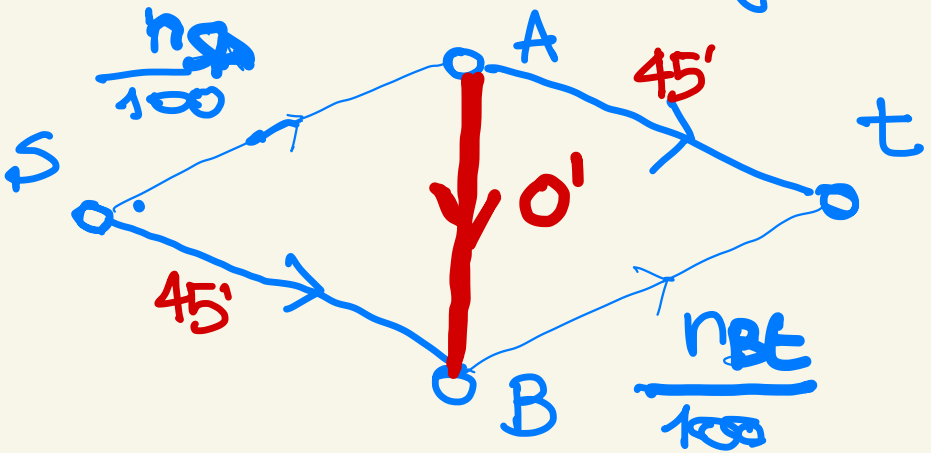
GIOCO NON-COOPERATIVO

- inf. complete
- non comunicat.
- simultaneo

$$\left\{ N, \{X_i\}_{i \in N}, \{\zeta_i : X_1 \times X_2 \cdots \times X_m \to \mathbb{R}\}_{i \in N} \right\}$$

- N: set of players
- $\{X_i\}_{i \in N}$: set of strategies $i \in N$
- $\zeta_i : X_1 \times X_2 \cdots \times X_m \to \mathbb{R}$: payoff $i \in N$ (INSIEME STATI)

BRAESS' PARADOX (1968)



n_{SA} = # cars S→A

n_{Bt} = # " B→t

$N = 4000 - n_{SA} + n_{Bt}$

$X_i = \{S_{ABt}, S_{At}, S_{Bt}\}$ $i \in \mathbb{N}$

C_i = lunghezza percorso scelto ≡ meglio stato

$n_A = 2000$

$n_B = 2000$

↓

65 min

80 min

$\ell(S_{At}) = \frac{n_{SA}}{100} + 45$

$\ell(S_{Bt}) = 45 + \frac{n_{Bt}}{100}$

$\ell(S_{ABt}) = \frac{n_{SA}}{100} + \frac{n_{Bt}}{100} + 0$

HOTELLING'S MODEL

1km

$N =$

$x_i = [0,1]$

c_i