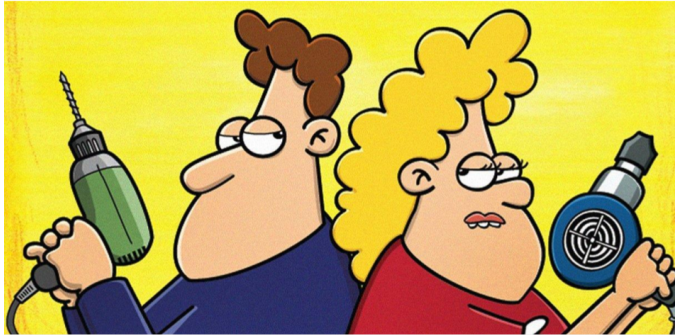


Guided notes

Game theory

Today: Some classic simultaneous-move games

BATTLE of THE SEXES



PAYOFF
MATRIX

MS. OW

SMALL
CLUB

BIG
PARTY

MR. COLUMN

SMALL
CLUB

BIG
PARTY

SMALL CLUB	BIG PARTY
,	,
,	,

In what way(s) can you win this game?

GAME OF CHICKEN



PAYOFF
MATRIX

JAMES DEAN

SWERVE

DRIVE
STRAIGHT

BUZZ

SWERVE

DRIVE
STRAIGHT

SWERVE	DRIVE STRAIGHT
,	,
,	,

In what way(s) can you win this game?

“Commitment devices” (good for Kevin Bacon, bad for Buzz)

STAG HUNT



PAYOFF
MATRIX

FRED

BARNEY

STAG HARE

	STAG	HARE
STAG	,	,
HARE	,	,

Can cooperation be maintained?

THE PRISONERS' DILEMMA



PAYOFF
MATRIX

MR. BLUE

MR. RED

	,	,
	,	,

Can cooperation ever be achieved?

Mini-handout: I do *not* expect you to memorize the following information, but I do want to make it clear that classic games like Battle of the Sexes, Chicken, Stag Hunt, and the Prisoners' Dilemma are different games because of differences in their payoff structures. When the games have symmetric payoffs, we can write them more generally as follows.

General payoff structure:

		Player B	
		Left	Right
Player A	Up	a, a	b, c
	Down	c, b	d, d

Special cases:

Battle of the Sexes: $b > c \geq a \geq d$

Chicken: $c > a > b > d$

Stag Hunt: $a > c \geq d > b$

Prisoners' Dilemma: $c > a > d > b$