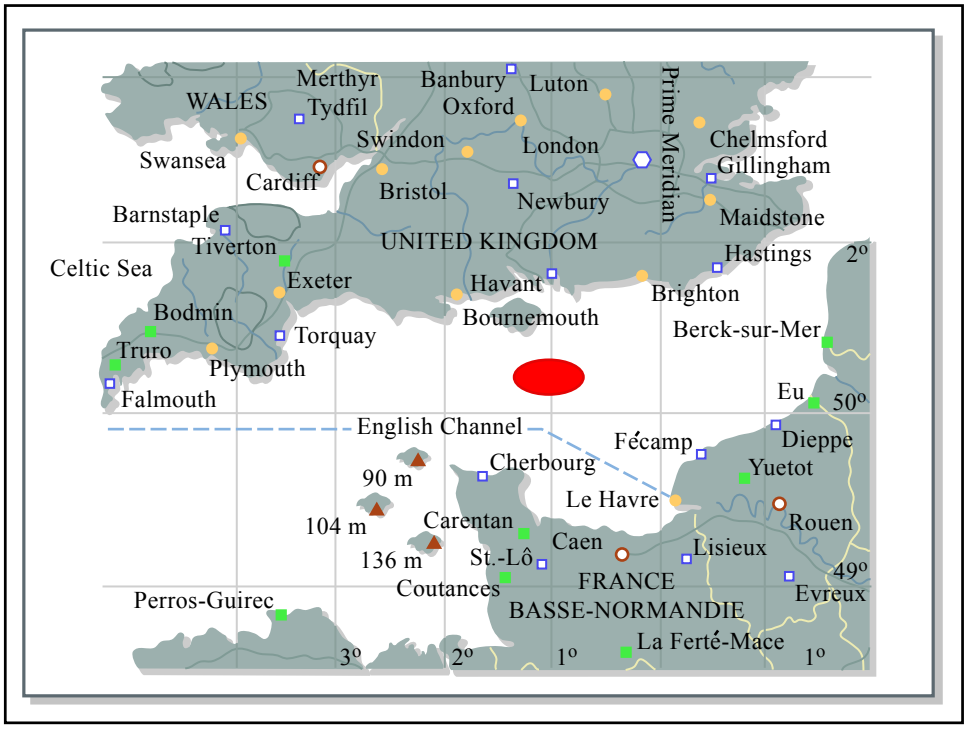
14.12 Economic Applications of Game Theory

- Professor: Muhamet Yildiz



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Name of the game

Game Theory = Multi-person decision theory

- The outcome is determined by the actions independently taken by multiple decision makers.
- Strategic interaction.
  - Need to understand what the others will do
  - … what the others think that you will do
  - …

A coordination game

	Left	Right
Top	(1,1)	(0,0)
Bottom	(0,0)	(1,1)

A game

1 \ 2	L	m	R
T	(1,1)	(0,2)	(2,1)
M	(2,2)	(1,1)	(0,0)
B	(1,0)	(0,0)	(-1,1)

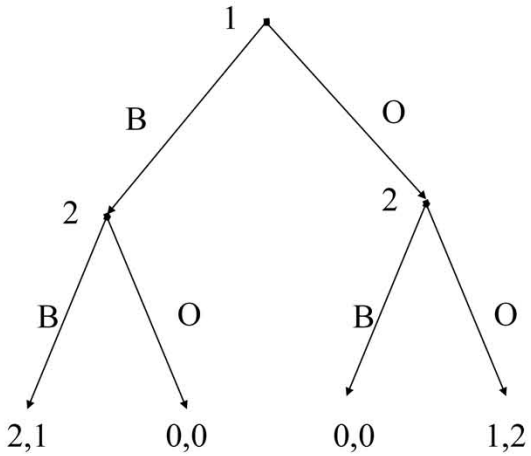
A coordination game

	Left	Right
Top	(1,1)	(0,0)
Bottom	(0,0)	(1,1)

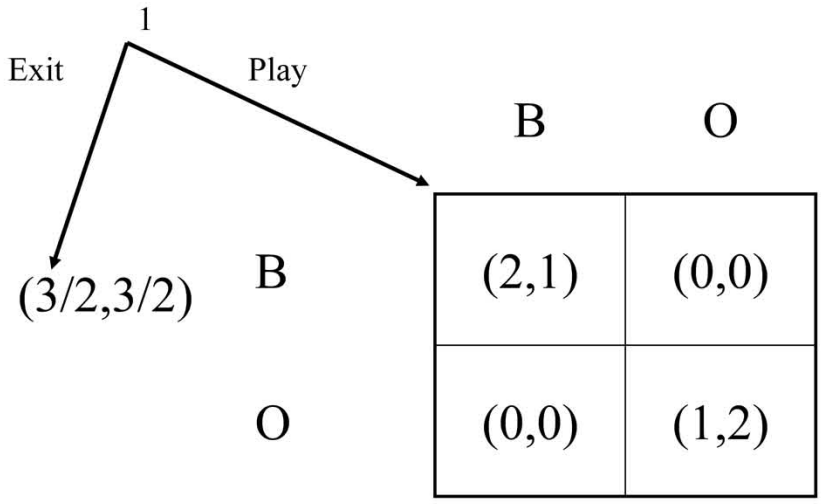
Battle of Sexes

	Baseball	Opera
Baseball	(2,1)	(0,0)
Opera	(0,0)	(1,2)

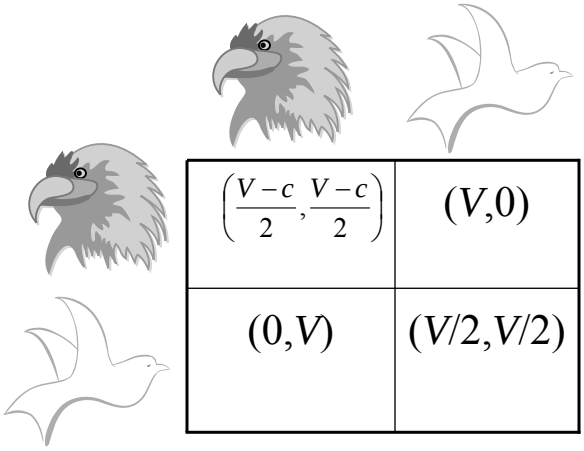
Battle of The Sexes with perfect information



Battle of Sexes with outside option



Hawk-Dove game



$\left(\frac{V-c}{2}, \frac{V-c}{2}\right)$	$(V,0)$
$(0,V)$	$(V/2,V/2)$

$V > c$

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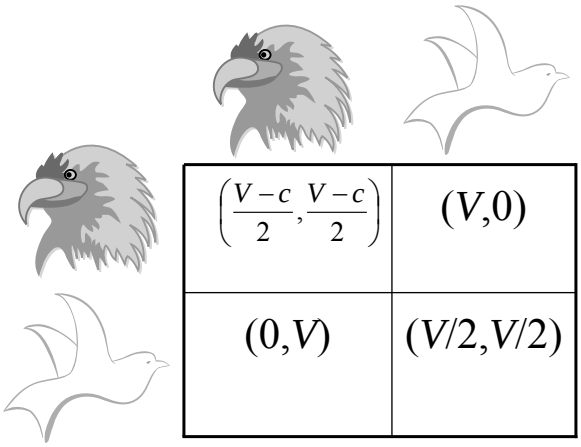
Hawk-Dove game



$\left(\frac{V-c}{2}, \frac{V-c}{2}\right)$	$(V,0)$
$(0,V)$	$(V/2,V/2)$

$V < c$

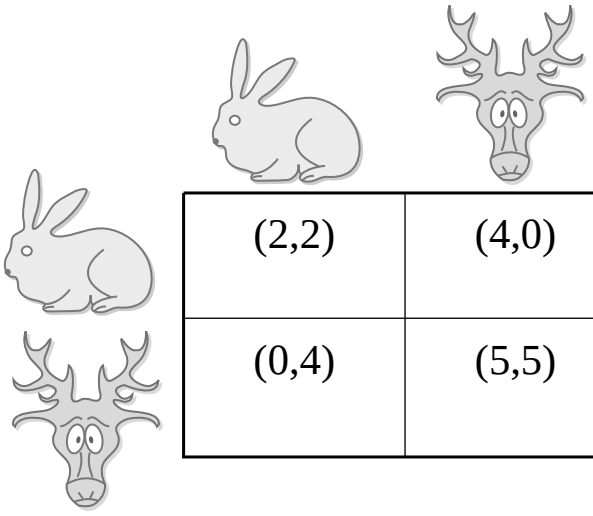
Image by MIT OpenCourseWare.

Chicken

(-1,-1)	(1,0)
(0,1)	(1/2,1/2)

Image by MIT OpenCourseWare.

Stag Hunt



(2,2)	(4,0)
(0,4)	(5,5)

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Fall 2012