Toulouse School of Economics

TSE M1 – Semester 1
September 2012
Paul Seabright

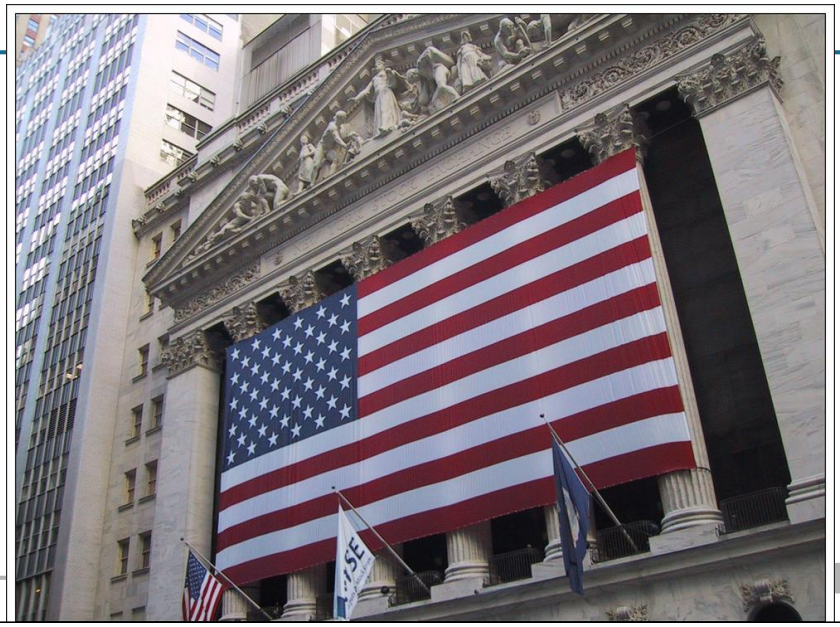
# Markets and Organizations

## What is happening in this picture….?

And what does that scene have in common with this one?

...and this?

## …and this?



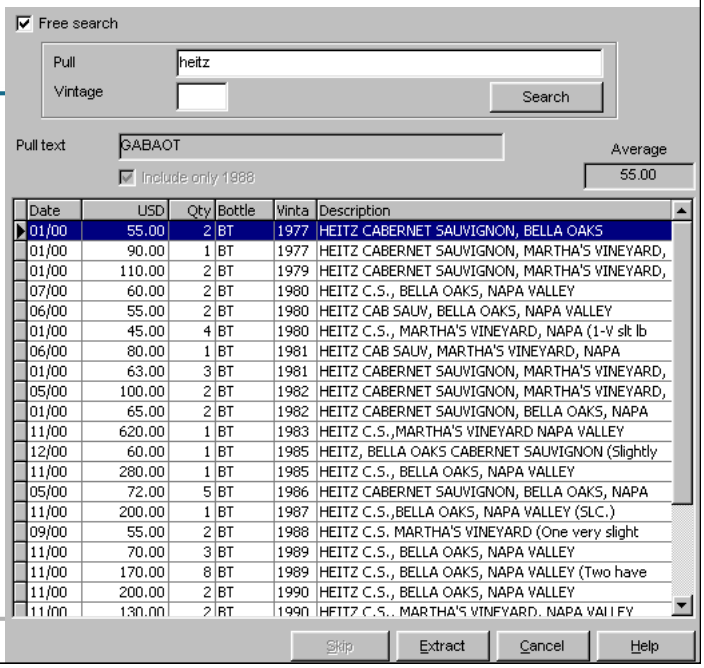
## What does this….

## …have in common with this?

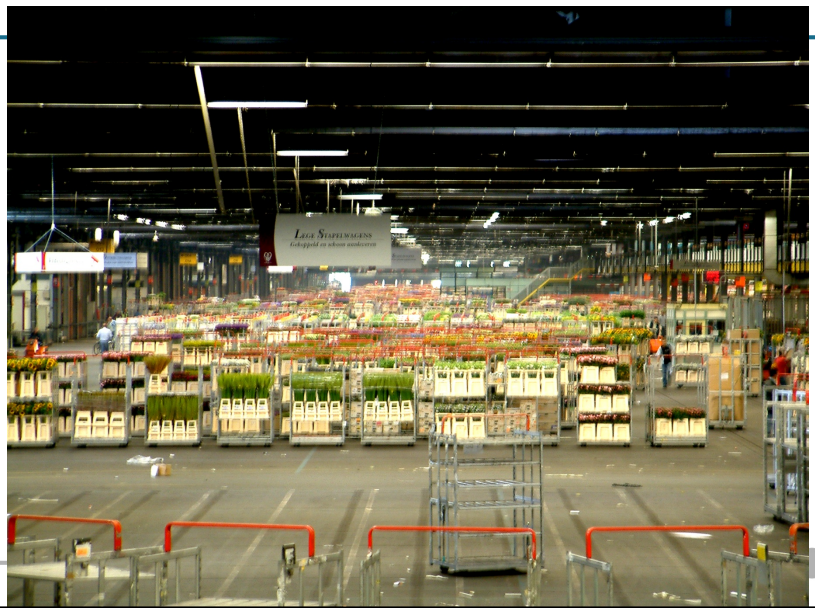
## …..and this…?

# What does this….

…have in common with this?



## …and this?



## …and this?

What does this….

Ba Daily N

Sunday, August 30, 2006

**Brawl Leaves One Dead, On**

Last night at the Teacup and Otters Bar & Lounge a fight broke out leaving one man dead and one man half blind and "retarded for life."

Though details are unclear, witnesses say the fight broke out when two of the drunk regulars assaulted a rather large patron. Two men were injured in the brawl. One was treated for minor cuts and bruises. The other, Pang Du, is in stable condition at Kuai Tian Memorial Hospital after suffering serous injuries.

"One of these out-of-towners threw a hot rock at Pang's eye," a witness said. Other witnesses claim that Pang, half-blinded, began stumbling about when another man using a fire poker struck Pang "so hard he was retarded for life."

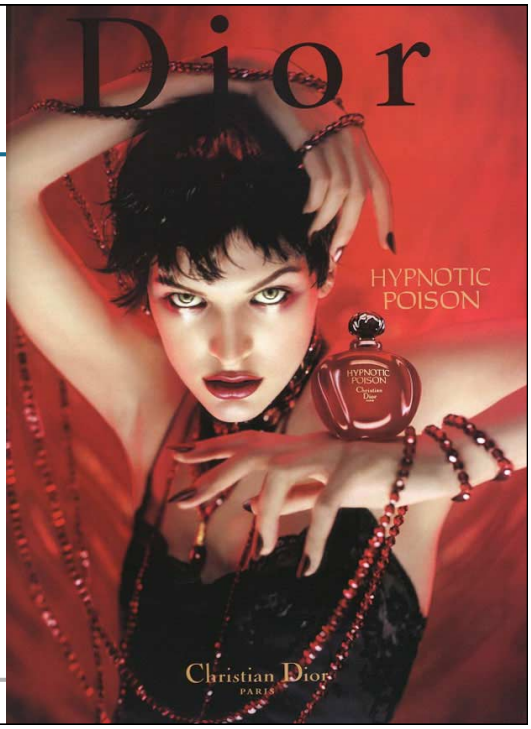
Another man was found dead at the scene by multiple knife wounds. Police are currently searching for a man referred to as the Man Mountain in connection with the killing.

Locals are claiming that the Claws of the White Tiger are responsible for the violence. "They burn our crops and villages and then they come here acting like they own the place," said Lao Tse, a local merchant. "They're nothing but a bunch of drunken louts!"

…have in common with this?

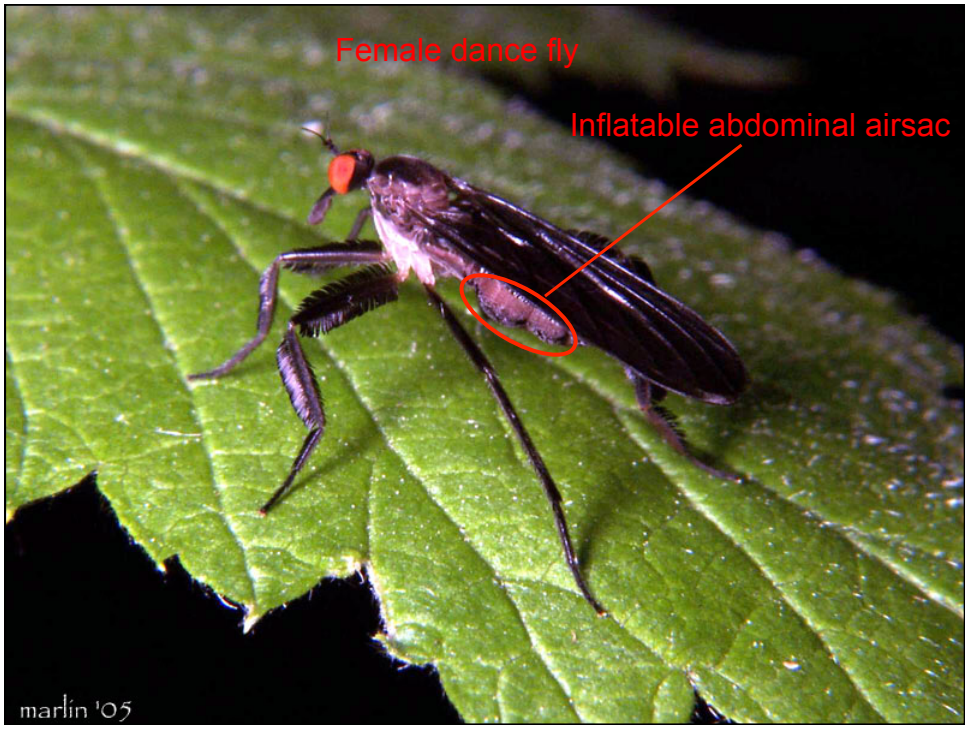
...and this?

What does this....



…have in common with this?


## They're all examples of market behavior…..


Female dance fly
Inflatable abdominal airsac
marlin '05


Male dance fly
marlin '05

## Markets and Organizations: outline of the course

- 1) How has exchange with strangers become a near-universal feature of human societies when everything suggests it was a very unnatural thing for our prehistoric ancestors to do?
- 2) Under what circumstances do markets provide a natural and relatively efficient means of undertaking these exchanges?
- 3) What kinds of non-market institution provide an alternative means of undertaking these exchanges, and under what circumstances do they work naturally and efficiently?
- 4) How are changes in the technology of information transmission and processing changing the nature of the institutions that mediate economic exchange?

## Markets and Organizations: outline of the course

- Weeks 1 and 2: The psychological foundations of market exchange
- Weeks 3 and 4: The evolution of markets through history
- Weeks 5 and 6: Non-market institutions and their evolution through history
- Weeks 7 and 8: The Coase question: the fluctuating frontiers of market and non- market exchange
- Weeks 9 and 10: Signaling, networks and bidirectional choice
- Weeks 11 and 12: The New Information Economy and the future of exchange

## Some types of markets:

- Competitive markets
- Oligopolistic markets
- Monopolistic markets
- Auction markets
- Two-sided markets
- Artificial markets
- Pseudo markets

## Some types of non-market institutions

- Firms
- Governments
- Charities and NGOs
- Schools and universities
- Armies
- Criminal gangs
- Networks
- Informal exchanges

## Introduction: the issues

- Our psychological talents for exchange
- Natural selection and the trade-off among our talents
- What do we need those talents to accomplish?
- Trust between strangers – a challenge through prehistory
- The balance between cognition and the emotions
- How institutions extend the reach of our psychological talents for exchange

## We have some remarkable talents for exchange

- Remember the photograph and how quickly you could interpret what was going on..
- We have many skills that help us to size up social situations, without knowing explicitly how we are doing so
- They evolved in prehistoric conditions but are now applied in quite different settings (like modern markets)
- Gaining insight from evolutionary psychology is about understanding the trade-offs among our talents that were adaptive in prehistoric conditions
- And the constraints these impose on us today

## Natural selection: why is there a trade-off among our talents?

- Brain tissue is particularly expensive for the body to build and maintain
- So natural selection has had to build in some trade-offs: we are good at some cognitive challenges and bad at others
- We are particularly prone to attention blindness:
- So what can be said about natural selection's priorities?
- A clue: the Wason selection task

A scientist is investigating a hypothesis that states "people with two X chromosomes have mind recognition skills that score above 25 on the Baron Cohen test". She has information about the following groups, who are independent samples of the population. In each case she either
a) knows the chromosomes of the individuals and can investigate to test their mind recognition skills; or
b) knows their mind recognition skills, and can investigate their chromosomes

She wants to find out whether any groups violate this hypothesis

| Group A: Two X chromosomes | Group B: One X chromosome | Group C: mind recognition skills >25 | Group D: Mind recognition Skills <25 |
|---|---|---|---|

Which groups should she investigate?

A government passes a law stating that "households that own a television must have a licence".
It has information about the following groups, who are independent samples of the population. In each case it either
a) knows whether they have a television, and can investigate to see whether they have a licence; or
b) knows whether they have a licence, and can investigate to see whether they have a television

It wants to fine any people who have broken this law

| Group A: own a television | Group B: don't own a television | Group C: have a licence | Group D: don't have a licence |
|---|---|---|---|

Which groups should it investigate?

A government is investigating the state of digital connectedness of its population, and specifically wishes to test the hypothesis that television users also have a broadband internet connection.
It has information about the following groups, who are independent samples of the population. In each case it either
a) knows whether they have a television, and can investigate to see whether they have a broadband internet connection; or
b) knows whether they have a broadband internet connection, and can investigate to see whether they have a television

| Group A: own a television | Group B: don't own a television | Group C: have internet | Group D: don't have internet |
|---|---|---|---|

Which groups should it investigate?

## Trust between strangers:

- In modern societies even the simplest elements of our daily lives (food, clothes) depend on the collaboration of others, most of whom we never see
- This collaboration usually requires trust
  - Because transactions are not simultaneous
  - Because the value of what we exchange is not transparent
- How do we know whom to trust? Mistakes can be costly, even deadly
- Our solution:
  - An evolved cognitive and emotional psychology
  - Trust in *institutions*

31

## The key to our psychological trade-offs

- Cognitive capacities are exquisitely context-sensitive but no good for making commitment
- Recent evidence from experimental psychology and neurophysiology suggests *emotion* plays an important role in social cooperation, which was vital to our ancestors' survival
- It also suggests that many of the skills that promote cooperation are adapted modules of our brain, not just forms of general-purpose rationality
- Like chimps, we avoid violence when it doesn't pay – but we have more elaborate mechanisms to stop it from paying

## A view from behavioral economics and neuroscience

- Cooperation needs commitment PLUS discrimination
- Brain tissue is expensive, so our ancestors needed economical ways of encoding such behavior, either in cognitive short-cuts (for cheater detection) or in emotions (for commitment)
- Natural selection has repeatedly recruited existing neural machinery (eg homeostatic mechanisms) for strategic purposes (see Churchland: *Brain Trust*, Princeton 2011)
- Neuroscientific evidence is accumulating that commitment is linked with reward circuits in the brain

## Anatomical separation of exploratory and exploitative decisions in the brain (Source: Dow et.al., Nature, June 15 2006)

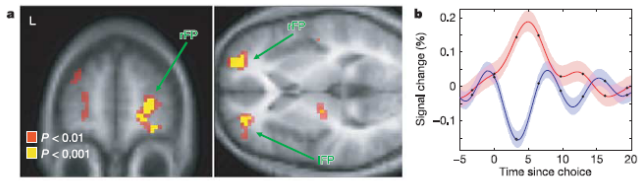



**Figure 3 | Exploration-related activity in frontopolar cortex.** **a**, Regions of left and right frontopolar cortex (lFP, rFP) showing significantly increased activation on exploratory compared with exploitative trials. Activation maps (yellow, $P < 0.001$; red, $P < 0.01$) are superimposed on a subject-averaged structural scan. The coordinates of activated areas are [−27,48,4, peak $z = 3.49$] for lFP and [27,57,6, peak $z = 4.13$] for rFP. **b**, rFP BOLD time courses averaged over 1,515 exploratory (red line) and 2,646 exploitative (blue line) decisions. Black dots indicate the sampling frequency (although, because sample alignment varied from trial to trial, time courses were upsampled). Coloured fringes show error bars (representing s.e.m.).

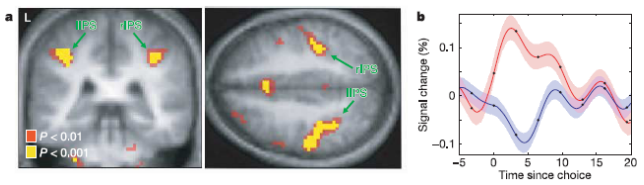
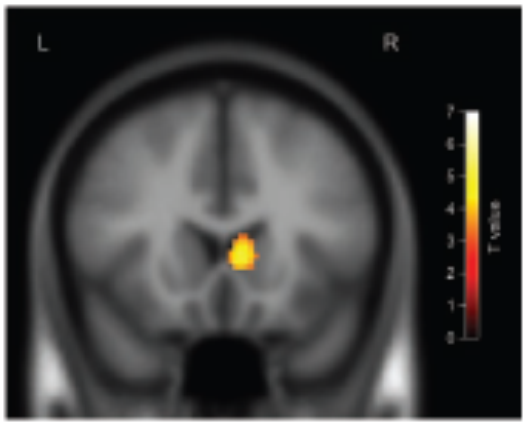



**Figure 4 | Exploration-related activity in intraparietal sulcus.** **a**, Regions of left and right intraparietal sulcus (lIPS and rIPS) showing significantly increased activation on exploratory compared with exploitative trials. Activation maps (yellow, $P < 0.001$; red, $P < 0.01$) are superimposed on a subject-averaged structural scan. The coordinates of the activated areas are [−29,−33,45, peak $z = 4.39$] for lIPS and [39,−36,42, peak $z = 4.16$] for rIPS. **b**, lIPS BOLD time courses averaged over 1,515 exploratory (red line) and 2,646 exploitative (blue line) decisions. Black dots indicate the sampling frequency (although, because sample alignment varied from trial to trial, time courses were upsampled). Coloured fringes show error bars (representing s.e.m.).

# The neural basis of altruistic punishment

(Source: de Quervain et.al., *Science*, August 27 2004)

Activation in the caudate nucleus when subjects feel a strong desire to punish others for unfair behavior (compared to control when no such unfair behavior has taken place):




Activation in the prefrontal cortex when subjects know that punishing others will be personally costly to them (compared to control when desire to punish is present but punishment is not costly):