Employment Choice

- You work for JPMorgan and need a new analyst.
- Candidate 1
  - Maths major, specialising in number theory.
  - Interests: Chess, backgammon and poker.
- Candidate 2
  - Sociology major, specialising in addiction and drug policy.
  - Interests: Film and drama.
- Who would you employ? Why?
Your Actions Reveal Information

- A high GPA reveals good information to employers.
- Your *actions* also reveal information.
- One CEO claimed you should not hire anyone who
  - Wears a bow-tie (too fussy)
  - Smokes a pipe (“can’t do” people)
  - Has a beard (too academic)
- Problem is *not* the bow-tie, pipe or beard.
  - Problem is that these features are *chosen* to signal some aspect of the individual.

Law Firm’s Marbled Buildings

- Law firms care about appearances
  - Marbled floors
  - Immaculate carpets
- This is not to make offices nicer to work in.
  - This is to signal that firm is successful.
- Firm cannot choose not to signal
  - Plain offices signals a less successful firm.
Warranties

- Hyundai offers America’s Best Warranty™
  - 5 year, 60,000 miles bumper to bumper.
  - 10 year, 100,000 miles powertrain.
- In 1986, Hyundai entered US market. Customers were cautious.
  - What signal does this warranty send?
- ShedRain sells umbrellas with lifetime guarantees
  - Does this send a signal?

Fashion

- People spend a lot of money on their appearance. Consider the following cases.
- You are going out for an evening in NYC. You wish to signal your immense wealth.
- You are going for an interview with JPMorgan. You wish to appear serious and intelligent.
- You are going to a goth concert....
When Will a Signal (Not) Work?

- You are trying to convince an employer you have high IQ.
- For action \( a \) to serve as signal, two conditions must hold:
  1. High IQ people must want to choose \( a \)
  2. Low IQ people must not want to choose \( a \)
- Called “credibility test” or “single crossing condition”.
- Are these conditions satisfied in the following examples?
  - You get a degree to signal ability.
  - Law firms have large building to signal success.
  - Hyundai offers long warranties to signal quality.
  - You wear a Rolex to signal wealth.

Mathematical Example: Education Choice

- Agents differ in ability
  - Productivity is \( \theta_1 \) or \( \theta_2 \), where \( \theta_2 \geq \theta_1 \)
- Education
  - For type \( \theta_i \) cost of degree is \( c_i \), for \( i \in \{1, 2\} \)
  - Education has no affect on productivity.
- Education can serve as signal if
  1. Agent 2 gets degree, \( \theta_2 - c_2 \geq \theta_1 \).
  2. Agent 1 does not get degree, \( \theta_2 - c_1 \leq \theta_1 \).
- Rearranging, a degree acts as a signal of ability if
  \[
  c_1 \geq (\theta_2 - \theta_1) \geq c_2
  \]
The Peacock’s Tail

• Evolutionary puzzle
  – Female peacocks go for male with longest tail.
  – But tails are hard to grow and reduce mobility.
  – How can tails survive evolution?

• Tails act as a signal
  – Tails act as signal of strength.
  – They are credible signal because they are cumbersome.

• Why do long tails pass the credibility test?

Bargaining and Strikes

• Suppose a firm (NHL) is bargaining with a union (NHLPA).
  – The firm’s profits are either high or low,
  – Union doesn’t know firm’s profits.

• Firm claims profits are low and thus wages should be low.
  – Should union believe profits are low?

• Firm is willing to suffer a year strike and forgo a year’s profit.
  – Should union believe profits are low?

• Why do strikes pass the credibility test?
Initial Public Offerings

- Two seemingly identical internet firms, A and B, have IPOs
  - Owners of A sell 25% of company.
  - Owners of B sell 75% of company.
- Consider owners’ position
  - Owners like to diversify their holding so would like to sell the company.
  - But owners have inside information.
- Which share price could be higher?
- Why do share holdings pass the credibility test?
- Problem: Why not sell 25% at IPO and sell rest afterwards?
  - Investment banks have lockup period: original owners banned from selling stock for 180 days after IPO.

Leadership

- Managers know more about company than employees
  - Know how likely company is to succeed.
  - Know the direction company is likely to head.
- Managers want employees to invest in firm–specific skills.
  - Employees only want to invest if they have future in the firm.
- Managers can signal company prospects by taking salary in shares and options.
- Managers can signal direction of company through investments and advertising.
Introductory Offers and Advertising

• In 1998 Gillette invented the Mach3 at a cost of $750m.
  – In the U.S. they spent $100m on advertising.

• Reasons for advertising
  – Let people know about product.
  – Emotional power of adverts.
  – Signalling product quality

• Advertising persuades people product is good and they should try it.
  – Credibility test: would company with poor product copy this strategy?

Limit Entry Pricing

• Entry game:
  \( t=1 \) Incumbent chooses price.
  \( t=2 \) Entrant chooses to enter or not. Then incumbent and entrant simultaneously chooses prices.

• Limit entry pricing:
  – Incumbent chooses low period 1 price and blocks entry.
  – Problem: why should period 1 price affect post-entry game?

• Limit entry pricing as signalling strategy
  – Incumbent has high or low cost.
  – Entrant does not want to enter if incumbent has low cost
  – Incumbent can signal that she has low cost by charging low price in period 1.
Toxic Waste

- A large manufacturing company wanted to locate toxic recycling plant in a midwestern town.
  - It promised to bring jobs and prosperity.
- Locals had health and safety concerns.
  - They were also concerned about house prices tumbling.
- Solution: Company indemnifies residents against fall in house prices over 5 years.
  - If the plant was safe, then this would cost the firm nothing.
- Credibility problem
  - The tactic was proposed to management
  - Management responded: “We couldn’t do that. It would cost us a fortune”.

Asymmetric Information: Overview

- Suppose a principal and an agent are trying to trade.
- There are two types of asymmetric information.
- Adverse selection
  - Agent has hidden information about their characteristics (e.g. their ability) or the state of the world.
  - Signaling: informed party (agent) signals their type.
  - Screening: uninformed party (principal) separates agents by providing contract only attractive to some types.
- Moral hazard
  - After the contract the agent takes unobservable action (e.g. chooses how hard to work).
Assignment

- Read, “I’ve Started So I’ll Finish”, The Economist, 29/9/05 (on website).
- How does the US and UK dropout rates differ?
- How does dropping out affect salaries in the UK and the US?
- Why might this be the case?