LSU E. J. OURSO COLLEGE OF BUSINESS

Dr. Chun's Numb3rs & L∅gic

The Pirate Game

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The Pirate Game

There are five *rational* pirates, A, B, C, D and E. They find 100 gold coins. They must decide how to distribute them. The Pirates have a strict order of seniority: A is superior to B, who is superior to C, who is superior to D, who is superior to E.

The Pirate world's rules of distribution are as follows: The most senior pirate should propose a distribution of coins. The pirates should then vote on whether to accept this distribution; the proposer is able to vote, and has the casting vote in the event of a tie. If the proposed allocation is approved by vote, it happens. If not, the proposer is thrown overboard from the pirate ship and dies, and the next most senior pirate makes a new proposal to begin the system again.

Find the optimal strategy for *A*.

* Backward Iterations: Start from the last step!

- Step 4. (D, E)

  D=100 E=0

- Step 3. (C, D, E)

- Step 2. (B, C, D, E)

- Step 1. (A, B, C, D, E)

* Backward Iterations: Start from the last step!

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- Step 3. (C, D, E)

  C=99 D=0 E=1

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- Step 1. (A, B, C, D, E)

  A=98 B=0 C=1, D=0 E=1

The pirate game is a simple mathematical game that illustrates how, if assumptions conforming to a *homo economicus* model of human behavior hold, outcomes may be *surprising* !

The Ultimatum Game

The so-called "ultimatum game" generally involves two players: One is given a certain amount of money, say $100, by an experimenter, and the other is given a kind of veto.

The first player may offer any nonzero fraction of the $100 to the second player, who can either accept or reject it. If he accepts it, he is given whatever amount the first player has offered, and the first player keeps the balance. If he rejects it, the experimenter takes the $100 back.

Viewing this in *rational* game-theoretic terms, one would argue that it's in the interest of the second player to accept whatever is offered, since any amount, no matter how small, is better than nothing.

This is not what happens, however. When the offers deemed too small, the offers are often rejected. The resentful rejecters say that "*better to receive nothing than to be humiliated*". Notions of fairness and equity, as well as anger and revenge, seem to play a role.

Homo economicus, or Economic man, is the concept, in some economic theories, of man (that is, a human) as a rational, perfectly informed, and self-interested actor who desires wealth, avoids unnecessary labor, and has the ability to make judgments towards those ends.

- Do you think the pirates are Homo economicus?
- Are you?
- Homo economicus is a valid assumption or a myth?

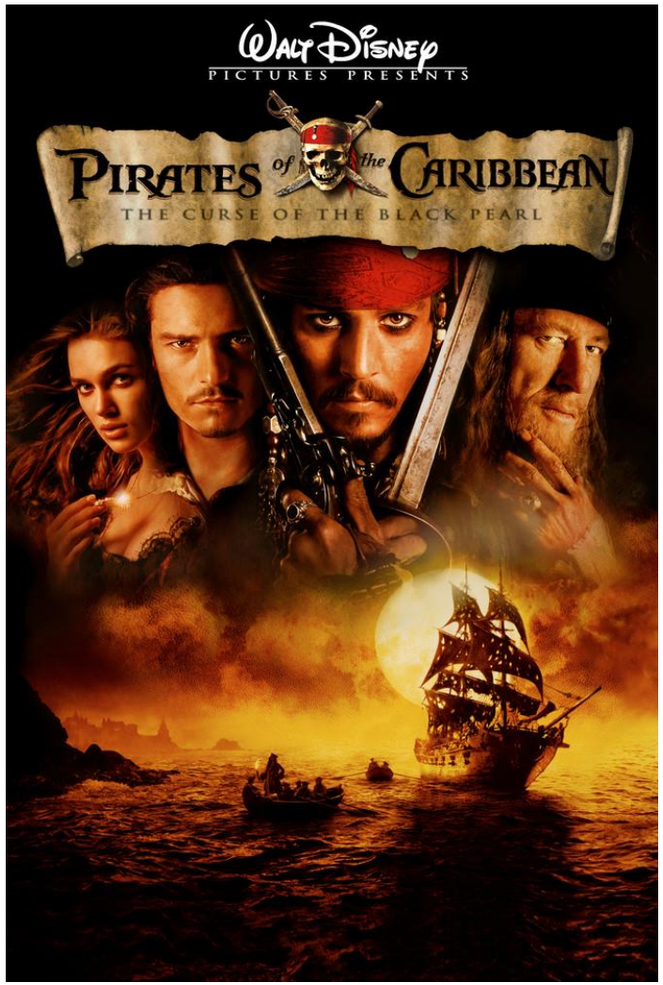
"Irrational exuberance" during the Dot-com bubble of the 1990s…

- **Alan Greenspan**, Chairman of Federal Reserve (1987~2006)

Movie Trivia

Blacksmith Will Turner teams up with eccentric pirate "Captain" Jack Sparrow to save his love, the governor's daughter, from Jack's former pirate allies, who are now undead.

Pirates of the Caribbean (2003)



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