Risk, Fear, Greed and Chocolate: An introduction to behavioral economics

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Outline

1. Motivation
2. Are People Altruistic?
3. How to make a guess
   - The Anchoring Rule
   - The rule of typical things (Representativeness heuristic)
   - The example rule (Availability heuristic)
   - The Good-Bad rule (Affect heuristic)
4. How to make choices

Game Theory in Traditional Economics

Rational players have

- Precise, unchangeable objectives
- Iron will
- No compassion
- Perfect self-control
- Perfect foresight
- Unlimited patience
- Unlimited, perfect memory
- Infinite computing speed

Behavioral Economics

- Game theory
- Human psychology
- Evolutionary history: Major impact on human perception and decision making.

Two aspects of the human mind

A useful metaphor:

- Gut vs. Head
- In ancient Greece: Dionysus vs. Apollo
- Quick and intuitive vs. slow and painful

The Ultimatum Game

Alice and Bob are anonymous to each other.

- Alice decides how to share £100 with Bob.
- Alice chooses a number $x \in [0, 100]$.
- Bob decides whether to accept or reject the offer of £x.
- If Bob accepts, then Bob gets £x, and Alice keeps £100-x.
- If Bob rejects, then both Alice and Bob get nothing.

Rationally, Alice would offer 1 cent and Bob would accept.
In reality, low offers are rarely made and almost never accepted.
In a typical play, an offer of $x \approx 30$ is made and accepted.
Altruism? Not really. More like “lust for revenge” on Bob’s part.

The Dictator Game

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70% of the Alice-players choose $x > 0$, and on average $x \approx 25$.
Altruism? Yes.
(But don't cheer too much. There is bad news ahead.)

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The Dictator Game: Modified version

- Alice decides how to share £100 with Bob.
- Alice chooses a number $x \in [-1, 100]$.
- Bob gets £x and Alice gets £100-x.

Only 35% of the Alice-players choose $x > 0$,
45% choose $x = 0$, and 20% choose $x = -1$.

Moral: You can turn an altruist into a thief and vice-versa, by asking the right questions.

(You get more altruism if Alice and Bob are observed by a third party, or if they had to work for the money.)

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- Was Gandhi older or younger than 140 years when he died?
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The age of Gandhi (version 2)

- Was Gandhi older or younger than 9 years when he died?
  100%: Older, of course.
- How old was Gandhi when he died?
  Average guess: 50.

When making a guess, you grab the first number that comes to mind (the anchor) and adjust from it. (But not enough.)

Example: Can of tomato soup. Only £2.99. Limit 12 per customer.

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Guessing the probability

1. What is the probability of a flood in the USA in 2011 that kills at least 1000 people?
2. What is the probability of an earthquake in California in 2011 that causes a flood which kills at least 1000 people?

Scenario 1 subsumes scenario 2, but the average guess for scenario 2 is much higher.

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How to estimate a risk very quickly?

- Something is more likely, the easier it is to recall examples of it.
- It does not matter how many examples, or what exactly the examples are.
- Works very quickly. Accurate for hunter-gatherers on a Pleistocene savanna, but not in modern life.
- Modern news report (only) very unlikely events. Twisted perception of risk.
- Terrorist attack, nuclear accident, child abducted by strangers, wrongly perceived as likely.
- People buy earthquake insurance right after earthquakes. Lower actual risk, but higher perceived risk.

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Good things must not be dangerous

- Summer, holiday, sun, beaches, swimming, ice-cream: Good
  Cannot be very risky.
  Nobody is afraid of skin cancer.
- Nuclear power $\Longrightarrow$ Nuclear weapons: Very bad thing
  Nuclear power plants must be very risky.
  Therefore, they must not be very beneficial.
  Many people are afraid of nuclear power plants.

Everything is relative

Make a choice:

1. A fully paid, all inclusive, weekend trip to Paris.
2. A fully paid, all inclusive, weekend trip to Rome.
3. Having your car stolen.

Should the 3rd inferior option influence your choice?
Of course not.

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Everything is relative (cont.)

Make a choice:

1. A fully paid, all inclusive, weekend trip to Paris.
2. A fully paid, all inclusive, weekend trip to Rome.
3. A fully paid, all inclusive, weekend trip to Rome. Breakfast not included.

Suddenly, option 2 (the better version of Rome), becomes more attractive. "At least it is better than something else."

Moral: It is very hard to judge absolute values. Thus we base decisions on relative comparisons.

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The power of “FREE”

Pieces of chocolate:
Lindt (very good; normal price 30 cents).
Hershey (moderate; normal price 5 cents).

Make a choice (limit 1 per customer):

1. Lindt for 15 cents. 73%
2. Hershey for 1 cent. 27%

Make a choice (limit 1 per customer):

1. Lindt for 14 cents. 31%
2. Hershey for 0 cents. 69%

Moral: FREE is not just a price. To promote something, do not offer a discount. Make it FREE.

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The high price of ownership

Make a choice:

A You get 2 pieces of chocolate.
Then, with 50% probability, I take one piece away.

B You get 1 piece of chocolate.
Then, with 50% probability, I give you a another.

People (and also animals) prefer Option B. Even with 40%.

Moral: You overvalue what you have. Loss aversion is a powerful force.

Example: Free trial. 30 days money back guarantee.

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The power of emotions

Kiss or Cash: Make a choice.

1. A kiss with your favorite film star. 25%
2. £60 in cash. 75%

Kiss or Cash (Version 2): Make a choice.

1. A 1% chance of winning
   A kiss with your favorite film star. 75%
2. A 1% chance of winning
   £60 in cash. 25%

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The Battle for Self-Control

I offer you dessert today. Make a choice:

1. Piece of chocolate cake
2. An apple

I will bring you dessert in 2 weeks, but you must decide already now. Make a choice:

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Further Reading I

Dan Ariely.
Predictably irrational.
HarperCollins publ. 2008.
(See also his talks at www.ted.com)

Tim Harford.
The undercover economist.
Oxford University Press. 2006.

Tim Harford.
The Logic of Life.
Abacus. 2008.

Further Reading II


Dan Gardner.
Risk (The science and politics of fear).
Virgin Books. 2009.


Steven D. Levitt and Stephen J. Dubner.
Freakonomics.
William Morrow. 2005.


Steven D. Levitt and Stephen J. Dubner.
Super Freakonomics.
Penguin Books. 2009.