Behavioural Economics: A Primer

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Relative to the "standard model" consider the impact of:

1. bounded rationality

2. bounded willpower

3. bounded self-interest

See DellaVigna "Psychology and Economics: Evidence from the Field", forthcoming in *Journal of Economic Literature*

"Research in behavioural economics has identified a variety of decision-making errors that may expand the scope of paternalistic regulation" [Camerer *et al.* 2003]

"All errors which he is likely to commit against advice and warning, are far outweighed by the evil of allowing others to constrain him to what they deem his good" [JS Mill 1859]

"My own feeling is that the inspiration is most likely to come through the stimulus provided by the patterns, puzzles, and anomalies revealed by [...] data, particularly when the prime need is to break our existing habits of thought" [RH Coase 1992]

"Extended warranty! — how can I lose?" [Bart Simpson 2000]

Firms vs. Consumers?

Consumers can be expected to exhibit greater "behavioural biases" than firms:

- A firm dealing with millions of consumers has more at stake in getting decisions right than a consumer buying occasionally from the firm

- Plausible that profit-maximizing firms will be able to drive out "behavioural" firms

On the other hand, group decision making can involve additional biases relative to individual decision making

Framing and Reference-Point Effects

People's choices are often affected by "irrelevant" factors of presentation:

Participants asked to imagine a new disease which untreated is expected to kill 600

people. Half the participants given choice of treatment with predicted impacts as:

A. 200 will be saved

B. One-third probability that 600 are saved, two-thirds probability none are saved.

[72% choose A.]

The other half given choice of treatment framed as:

C. 400 will die

D. One-third probability that no-one will die, two-thirds probability that 600 will die.

[78% choose B.]

Inconsistent with any [?] reasonable model of rational choice.

Many people—rich and poor—report that they would not accept an equal-chance bet of winning £110 or losing £100. If these people maximized their expected utility (a standard assumption in mainstream economics) then any reasonable calibration of their utility function would make them fantastically risk-averse. One explanation is that many people are "loss averse", and care about losses more than gains (presumably measured in relation to their current wealth).

Likewise:

- many people spend a small "windfall" differently from normal wealth
- people buy insurance for small items

- people more willing to take up loan offer if photo of bank manager is attached

- people more likely to vote for candidate at top of ballot

- economists whose surname starts with "A" are more successful

- people more likely to buy expensive bottle of wine when even more expensive wines are on the menu (the "compromise effect")

- people are more likely to buy a product if it is "on sale"

- "money illusion": managers believe workers are more likely to accept 5% wage rise with 10% inflation than a 5% wage cut when there's no inflation

- "end-point effects": people report that they preferred very painful dental treatment followed by slightly less painful dental treatment to just the very painful treatment

- people more likely to buy insurance if "please add insurance" tick-box is pre-ticked when they buy an air-ticket ("status quo bias")

- countries with "opt-out" organ donor systems often have more transplants than those with "opt-in" systems.

Such examples suggest that people do not always have stable preferences

Several situations in which people have to predict the rationality of others

e.g., stockmarket, incumbent facing potential entrant (and *vice versa*)

Consider this newspaper contest in Denmark, with 20,000 participants

- each contestant chooses number between 0 and 100

- average choice is computed

- person who is closest to <u>two-thirds</u> of average wins 5,000 Kr

- if everyone is rational (and believes everyone is rational, and so on), only sensible way to play this contest is to choose zero

- but average choice was 32.4, winning choice was 21.6 and only 2.2% chose zero [a few chose numbers above 67, which cannot be rational]

- most common responses were 33 (from people who expected other the contestants to choose randomly) and 22 (from people who predicted the other contestants predicted that other contestants choose randomly)

"Other-Regarding" Preferences

Most mainstream economics assumes people are selfish (no altruism, no spite)

"Ultimatum game": two players to share stake of $£10$

- First player offers to give $£x$ to other player (where $x = 1, 2, 3, ..., 10$)

- If second player accepts, the stake is divided accordingly; if she doesn't then neither player gets anything

- Assuming anonymous interaction and purely selfish preferences, predict that first player offers the smallest possible share $x = £1$

- But highly replicated experiments—with different stakes, different cultures—show usual offer is around 40-50% of the stake (Peruvian Indians offer more like 25%) and that low stakes are rejected

- People willing to lose money to "punish" a low offer (spite)

- Since an offer of 40% is rarely rejected, people who offer 50% also make "mistakes" (unless they're altruistic)

Similar factors might mean that consumers rebel if a firm "unfairly" exploits an advantage, or that firms don't like hurting their customers:

- e.g., coke machines which are more expensive in hot weather
- restaurants more expensive on Saturday night

Because of "fairness"-type considerations, in laboratory experiments there is often more "cooperation" observed then predicted by selfish preferences (especially in symmetric situations where equal shares can be a focal point)

- could imply that tacit collusion in oligopoly is easier to sustain than purely profit-maximizing models would suggest
- many price-fixing cases involve many participants and long durations

Rational people discount an advisor's incentives (if known) when taking advice

But evidence indicates people respond to advice even when advisor is known to be biased ("persuasion")

In an experiment people were rewarded by how accurately they guess the number of coins in a (fairly distant) jar

- "advisors" are close to the jar and provide advice about the number of coins
- in one treatment, advisors are known to be paid according to *accuracy* of guesses
- in other treatment, advisors are known to be paid according to *size* of guesses
- guesses were 28% higher in the second treatment

Empirically, small investors respond to persuasion by (biased) stock analysts, but larger investors do not

The need to simplify decision making

Consumers often face difficult decisions in markets

- they may be too "emotional" to search effectively (funerals, condoms, illegal drugs)

- there may be many different suppliers

- products may themselves be complex
  - much small print
  - difficult arithmetic (e.g., compound interest rates)
  - quality ascertained only after consumption
  - need to forecast future consumption (mobile phones, printers, likelihood of getting overdrawn)

Faced with such problems, consumers may:

- learn which products they like best by trial and error (only with repeat purchases)

- avoid buying altogether (jam experiment, employer savings plans)

- rely on word-of-mouth, and highly "available" anecdotes: the "law of small numbers"

- focus their scarce attention on one or two attributes they care about (e.g., price, safety) and ignore other dimensions ("non-compensatory heuristics")

- if firms can predict—or influence—which attributes are salient, they can try to exploit consumers in the less salient attributes
  - e.g., P&P on *eBay*
  - pre-ticked "add-ons" when buying online
  - exclusions in insurance contracts

Dynamic Choice: Weak Will

Faced with prospect of immediate gratification [cost], people may downplay future costs [benefits]

- people might prefer one candy bar now to having two tomorrow, but prefer two candy bars in a year and a day to having one in a year's time ("hyperbolic discounting")

- people might prefer completing a task tomorrow (and end up thinking the same way tomorrow - "procrastination")
  - running up excessive credit card debt
  - going to the gym too rarely
  - not cancelling gym membership when you realize you don't go
  - watching too much TV, eating too much, giving in to sexual impulses

- "teaser rates" for credit cards, magazine subscription, etc., play off this behaviour

Crucial distinction:

- *Sophisticated* people are aware (or learn over time) that they fall prey to temptation or procrastination

- *Naive* people are capable of fooling themselves repeatedly

People aware of their weaknesses can often find ways to avoid temptation

- empty the fridge of tempting food

- go into rehab

- cut up credit card, get bank account which doesn't allow overdrafts, pay savings into illiquid account

- get annual gym membership to avoid per-visit fees

Dynamic Choice: Over-Optimism or Over-Pessimism

- 93% of drivers think they are "better than average drivers"

- entrepreneurs entering a market over-estimate their future profits

- CEOs may over-estimate their ability to pick new projects or merger opportunities

- people often under-estimate their chances of developing serious illness

- people don't go to the gym as much as they hoped on Jan 1 when they got annual membership (and so would have been better off paying per-visit)

- evidence people get credit card with intention to pay it off every month, but instead get into debt

- people often over-estimate chance that new TV breaks down or they need to claim on house insurance

- competition doesn't necessarily help correct these consumer biases, since firms compete by giving consumers what consumers *think* they want

Dynamic Choice: "Projection Bias"

Another observed bias is that people tend to extrapolate too far into the future from their current preferences:

- hungry people buy more at the supermarket

- some rich people don't sign prenuptial agreements

- excitement of test-driving new car may lead to an impulse purchase

People may therefore pay too little attention to onerous notice periods or termination fees in contracts

- potential for policy to intervene to limit notice periods etc., or to institute "cooling off" periods

Warning

Problem with many behavioural economics models is that consumers are assumed to all have the *same* preferences (even if their information or naiveté differs)

Then, if some consumers buy a product which is against their interests, a "one-size-fits-all" policy which

- bans the bad product (e.g., credit cards), or
- bans bad product attribute (e.g., high penalty charge)

solves everything

But some consumers may actively *want* the "dangerous" product or "exploitative" contract clause:

- many people are able to enjoy the convenience of a credit card without getting into excessive debt

- sophisticated consumers may demand commitment devices to correct for impulsive behaviour (high penalty charges may help weak-willed consumers control their spending)

Policy must then trade-off

- protecting "behavioural" consumers who succumb to dangerous products or don't pay attention to detailed product attributes

- giving other consumers the products they prefer