

Rule Rationality:

A Synthesis of Behavioral and Mainstream Economics

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9 May 2017

The 2002 Economics Nobel Prize

was awarded to

Daniel Kahneman

and

Vernon Smith.

Kahneman showed that people are irrational.

Smith showed that people are rational.

What's going on?

Kahneman

- “In extensive research on human behavior based on surveys and experiments, ... **Kahneman** ... called into question the assumption of economic rationality. ... (**He** showed) that people are incapable of fully analyzing complex decision situations ... they rely instead on heuristic shortcuts and rules of thumb.”

– Information for the Public

www.nobelprize.org/nobel_prizes/economics/laureates/2002/popular.html

Smith

- “The first experiments in economics ... (tested) ... the most fundamental result in economic theory: ... (that) the market price (equilibrates) between supply and demand. ... **Smith** found, much to his surprise, that the prices obtained in the laboratory were very close to their theoretical values. ... other researchers ... by and large confirmed the results.”

– Information for the Public

www.nobelprize.org/nobel_prizes/economics/laureates/2002/popular.html

So, what indeed is going on?

Kahneman and Tversky themselves give the answer:

People use “heuristics” – rules of thumb; they do not consciously maximize. In their pioneering 1974 paper, they write:

“In general, (these heuristics) are quite useful, but sometimes they lead to severe and systematic errors.”

-- D. Kahneman and A. Tversky (*Science*, 1974)

In brief,

- **Smith** relates to the **usual**, the **rule**, the “**in general**;”
- **Kahneman** – to the **unusual**, the **exception**, the “**sometimes**.”

- And,

- they’re **both** right!

But, what was the Nobel committee up to?

They awarded the prize not, as usual, for **findings**, but for a **methodology**:

Laboratory experiments – and **surveys or polls** – in economics.

Georg HEGEL (1807)

Thesis: Classical Economics:
Rationality

Antithesis: Behavioral Economics:
Systematic Irrationality

Synthesis: Rule-Rationality

Act Rationality:

Maximize over **acts** – in **each** decision situation, choose an act that's best in **that** situation.

Rule Rationality:

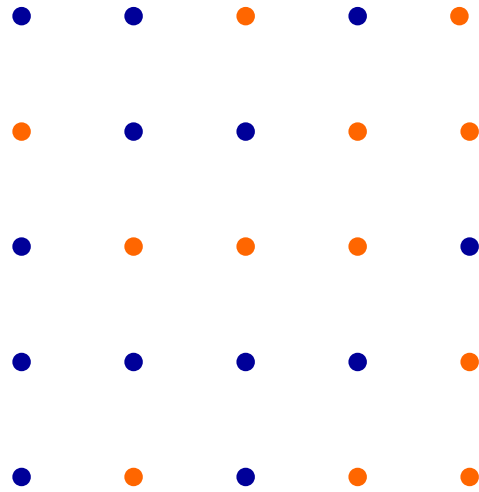
Maximize over **rules**--in each **kind** of decision situation, choose a rule that's best on the **whole**, or usually, but **not** necessarily always.

Act Rationality - deliberate, conscious.

Rule Rationality - evolutionary, learned,
subconscious.

Often, the **rule** is executed by means of a
mechanism.

a. Bees, flowers, and nectar



IRRATIONAL

(Andreas Bertch, circa 1985, unpublished)

Q: Actually, why would you expect rationality from a bee?

A: EVOLUTION – survival of the fittest

b. The Ultimatum Game

(Güth et al, 1982, Roth et al 1991, Roth and Slonim 1998, ...)

Two people must divide \$100.-

They are in separate rooms, do not know each other, and interact only this one time.

A designated one, **the offerer**, makes an offer. The other one, **the responder**, may either accept or reject. If he accepts, the amount is divided accordingly. If not, no one gets anything.

Results: Usually, most offers are **65-35** or more generous, and are **accepted**.

Some offers are **80-20**, and are usually **rejected**.

This is

IRRATIONAL

Possible explanations:

PRIDE, SELF-RESPECT, INSULT, REVENGE.

Irrelevant explanations:

REPUTATIONAL EFFECTS

- **BEES & FLOWERS**
Act: Look for food anywhere
Rule: **Go by Experience**
Mechanism: **Learning window**
- **ULTIMATUM GAME**
Act: When offered \$20, take them.
Rule: **Don't let people kick you in the stomach!**
Mechanisms: **PRIDE, SELF-RESPECT, INSULT, REVENGE**

Rationality is an expression of **evolutionary** forces, which work by the **RULE**, not the exception, not the contrived situation.

Other Examples:

- **Hunger & Enjoyment of Food**
- **Enjoyment of Sex**
- **Bees & Orchids**
- **Arrow's Pacific Island story**
- **Probability matching**
 - **Choosing a route to get to work (Dreze)**
- **Immediacy (Hyperbolic Discounting)**
- **Relevance**
- **Certainty**
- **Cooperation and the Gene for Altruism**

Bees & Orchids



Relevance

- **Linda** is young, single, outspoken, and very bright; as a student, she was deeply concerned with discrimination and social justice. Is it more likely that Linda is a bank teller or that she is a bank teller and an active feminist?

- **St. Ives**

As I was going to St. Ives,

I met a man with seven wives,

Every wife had seven sacks,

Every sack had seven cats,

Every cat had seven kits.

Kits, cats, sacks and wives,

How many were going to St. Ives?

2802 (= $1+1+7+7\cdot7+7\cdot7\cdot7+7\cdot7\cdot7\cdot7$)?

No; 1

- **Anchoring:**

After observing a roulette spin, subjects were asked to estimate the percentage of African states in the UN. The answers were significantly correlated with the outcome of the roulette spin.

Summary

In making decisions, people often do not consciously optimize. Rather, they use **heuristics** or rules of thumb (a.k.a. “cognitive biases”). These are often optimal **as rules**, in the sense that there is no rule that in most situations yields a better result. But in **unusual** situations, there may well be a better **act**, a decision that is better **in that situation**.

Merci!

Thank you!

DP 497 of the Hebrew University
Rationality Center:

http://www.ratio.huji.ac.il/dp_files/dp497.pdf