

JSM732 Behavioral Economics for Public and Social Policy

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The course consists of 3 main parts - **lectures**, **home reading** of recommended literature and **discussions / presentations**

13.10., 10.11., 24.11., 8.12. and 22.12. 2023

JSM732 Behavioral Economics for Public and Social Policy - GRADING

Activity / Output	Max. points	Min. points to pass	Grade	Points
Active participation in teaching activities	10	5	A	91-100
Critical reflection I	10	4	B	81-90
Critical reflection II	10	4	C	71-80
Presentation	10	5	D	61-70
Seminar paper	60	30	E	51-60
Total	100		F	0-50

JSB743 Nudging People in Societies: a Behavioral Economics Perspective

+ up to 5 bonus quiz points



Seminar Paper and its Presentations

Submission: 31 December 2023

1. Specification of the public and social policy issue
(description of the selected problem, its topicality and the tree of causal relations, stakeholders 3-5 pages),

10 min presentation: 10 November 2023

2. Strategy, Goals, Theoretical-conceptual framework
(proposal of a suitable behavioral policy design with 5-10 solution variants, 3-5 pages)

Seminar Paper and its Presentations

3. Effectiveness evaluation

(description of how the results obtained will be evaluated in terms of effectiveness, i.e cost-benefit analysis, technical feasibility, political viability, acceptance among course participants, 3-5 pages)

10 min presentation: 8 December 2023

4. Finalization

(proposal of a clear and convincing solution for the selected problem, a discussion of the advantages and disadvantages of the selected design and the reasons for its choice. 3-5 pages)

CRITICAL REFLECTIONS

Critical reflection I: Using an example of a public policy problem of your choice, propose solutions based on the concept of nudges

Submission : 19 November 2023

Critical reflection II: Give a case where nudging has undesirable (ethical, practical) consequences

Submission: 3 December 2023

CRITICAL REFLECTIONS

Points The nature of answer

9- 10 The topic was very well understood. The theoretical framework and empirical evidence were rightly applied. Relevant reference to at least four scientific sources in addition to the course's textbook. Value added: inventions, unusual but relevant perspective, appropriate case which fits to illustrate the given problematics.

7-8 The topic was rightly grasped. The theoretical framework and empirical evidence were rightly applied. Relevant reference to at least three scientific sources in addition to the course's textbook. Value added: relevant broader perspective, appropriate case which might illustrate the given problematics.

CRITICAL REFLECTIONS

- 4-6 The reflection corresponds with the topic, but it is more or less descriptive and doesn't provide satisfactory explanation of a given topic.
Relevant reference to at least two scientific sources in addition to the course's textbook.
- 1-3 The reflection only very loosely corresponds with the topic and its explanatory power is minimal. Relevant reference to at least one scientific source in addition to the course's textbook.
- 0 The reflection doesn't correspond with the topic. Failed reasoning - with logical failure or uncritical application of ideological cliché. The „common sense “answer without attempt to scientific analysis and reference to literature apart from the course's textbook. Answer delivered after deadline.

SEMINAR PAPER TOPICS

- 1) Poverty and Welfare Dependence
- 2) Homelessness
- 3) Unemployment
- 4) Waste Sorting
- 5) Social Media Dependence
- 6) Integration of immigrants
- 7) Corruption
- 8) Low Birth Rate
- 9) Overpopulation
- 10) Alcohol Addiction
- 11) Drug Addiction
- 12) Low Election Voter Turnout Rate
- 13) High Electricity Consumption
- 14) Food Waste
- 15) Pupils' Low Interest in Apprenticeships
- 16) Covid-19 Vaccination
- 17) Low Representation of Women in Politics
- 18) Excessive Vehicle Use and Car Dependence
- 19) Smoking
- 20) Tax Avoidance
- 21) Reporting of Domestic Violence and Sexual Assault
- 22) Childhood Obesity
- 23) Abortion and Contraception
- 24) Suicide Prevention
- 25) Fundraising and Crowdfunding
- 26) Retirement Savings
- 27) Climate change
- 28) Prevention of Cancer
- 29) Women's leadership and political participation
- 30) Housing problem



STUDIES



OPINIONS OF RESPONDENTS



OBSERVATIONS



REDUCE EVERYTHING TO 15-20 PAGES

Web of Science, Scopus and ScienceDirect

<https://www.webofscience.com/wos/woscc/basic-search>

<https://www.scopus.com/>

<https://www.sciencedirect.com/>

 Clarivate
Web of Science™



ScienceDirect



Scopus

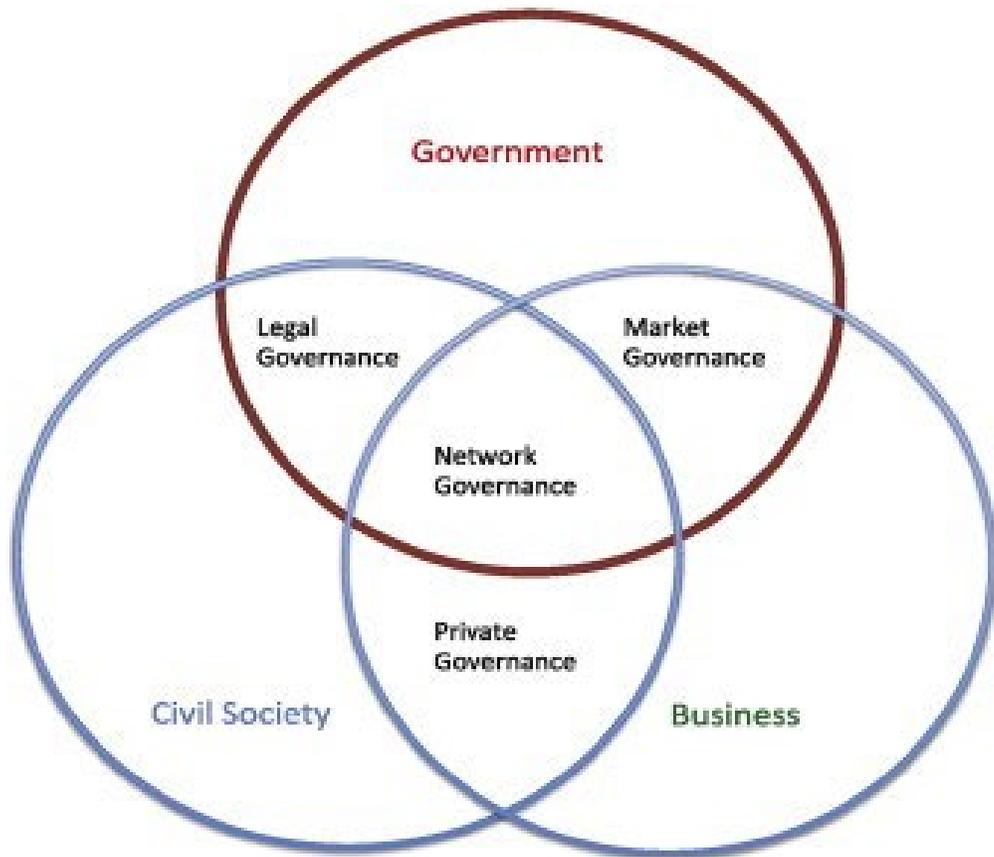
BLOCK I (October 13, 2023)

Topic 1: Modern Governance. Traditional and Procedural Policy Instruments and Mechanisms. A cross-sectoral and multi-actor dimension of problems. Identifying and unravelling persistent problems

Topic 2: Delimitation of Behavioral Economics *versus* Neoclassical Economics. Behavioral Public Choice.

Literature: KAHNEMAN, D. (2011). Thinking, Fast and Slow. New York: Farrar, Straus and Giroux, pages 7- 70 [česky: KAHNEMAN, D. 2012. Myšlení rychlé a pomalé, Jan Melvil Publishing, ISBN 978-80-87270-42-4, str. 9-80]

MODERN GOVERNANCE in 3-SECTOR ECONOMY



3-sector economy includes civil society, business and government

civil society + business → **private governance**

civil society + government → **legal governance**

business + government → **market governance**

civil society, business + government → **network governance**

R. Steurer. Disentangling governance: A synoptic view of regulation by government, business and civil society. *Policy Sciences*. 46(4):2013; 387–410

POLICY CYCLE HOURGLASS

APPLIED PROBLEM-SOLVING

Problem recognition

Solution Proposal

Choice of Solution

Solution
Implementation

Monitoring of Results



KEY ACTORS

Policy Universe

Policy Subsystem

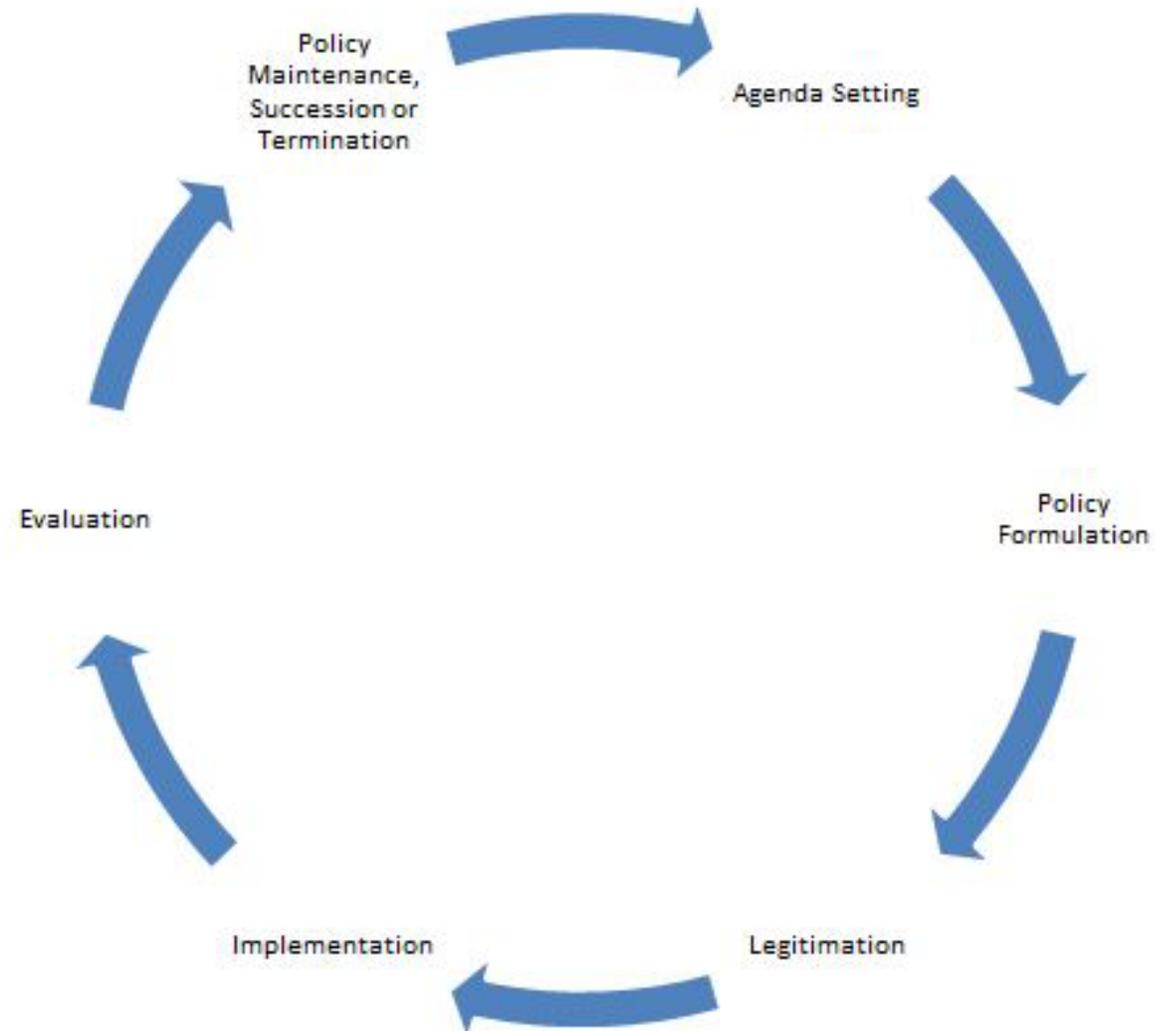
Govt. Decision-Makers

Policy Subsystem

Policy Universe

Adapted from Howlett, Ramesh and Perl, *Studying Public Policy: Policy Cycles and Subsystems*, Oxford Uni. Press, 3rd Ed. 2009

The Policy Cycle and its Stages



GOVERNANCE FAILURES

Mode of governance	Type of failure	Examples	Sources
Hierarchical	Government failure	Information gaps; lack of incentives; Political interference	Wolf Jr (1987), Le Grand (1991), Weimer and Vining (2011)
Market	Market failure	Externalities; Information asymmetries; Credible commitments	Pigou (1948), Wolf Jr (1987), Weimer and Vining (2011)
Network	Network failures	Difficult to establish in places without experience with it. Poor steering capacities. Weak associational structures.	Weiner and Alexander (1998), Provan and Kenis (2008), Tunzelmann (2010)

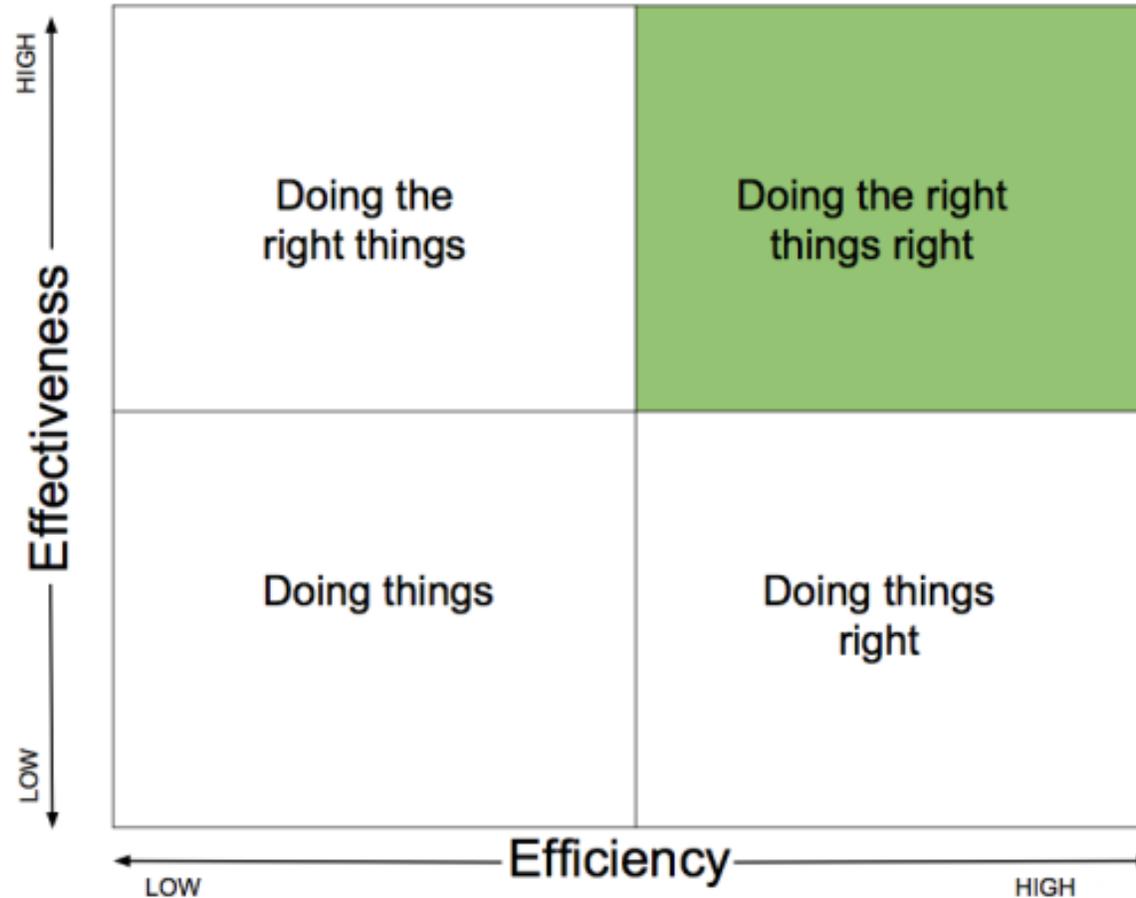
Governance failure may refer to what can also be described as policy failures – the **effectiveness, efficiency, and resilience** of specific policies.

A frequently mentioned example of a policy failure is the **War on Drugs**.

Policy failure can be, for example, due to misuse of or inefficient investment in science.

X. Wu, M. Ramesh. Market imperfections, government imperfections, and policy mixes: Policy innovations in Singapore. *Policy Sciences*. 2014; 1–16.

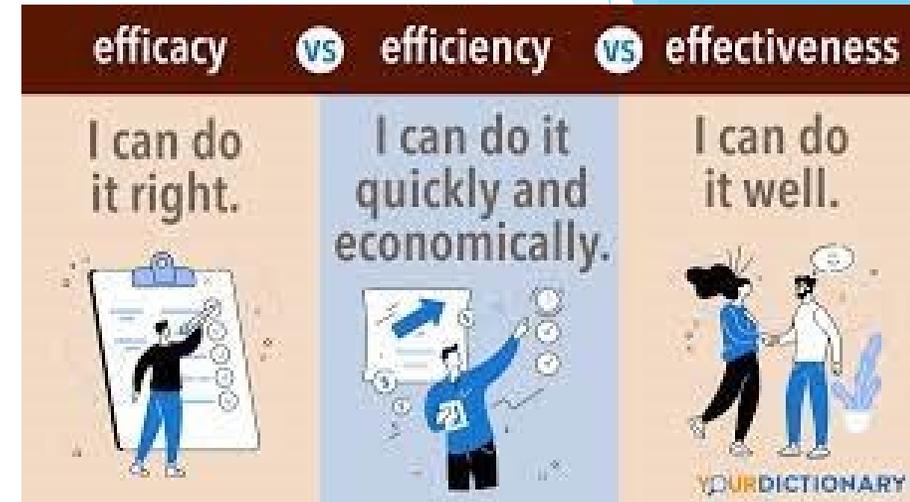
GOVERNANCE SUCCESS OR FAILURE



<https://www.theauditoronline.com/lean-rapid-plant-assessment-as-a-tool-for-more-effective-audits/effective-vs-efficiency-table/>

GOVERNANCE SUCCESS OR FAILURE

Efficiency	Effectiveness
1. Efficiency means doing things right.	Effectiveness is doing the right thing.
2. It is focused on process.	It is end result focused.
3. It is the ratio of output/input and focuses on getting maximum output with minimum efforts and resources.	Effectiveness is constantly measured if the actual output meets with desired output or not?
4. Efficiency is a productivity metric.	Effectiveness is a quality metric.
5. Efficiency is the ability to do something or produce something without wasting materials time or energy.	Effectiveness is doing the right things in the right way at the right time.



Efficiency - efektivita - doing more with less (or the same) financial, physical and human resources

Effectiveness – účelnost - the degree to which something is successful in producing a desired result

Efficacy - účinnost: the quality of being effective
 “The drug's efficacy has been questioned by consumer advocates.”

<https://grammar.yourdictionary.com/vs/efficacy-vs-efficiency-difference-between-results-based-words>

<https://icbritanico.edu.ar/2017/11/23/effective-efficient-why-you-can-choose-both-mm-46678013>

A Cross-sectoral and Multi-actor Dimension of Problems

For national governments to meet their programs, they need to develop and implement plans that involve **coordinating the actions of *local, regional and national* level actors from across *multiple sectors*.**

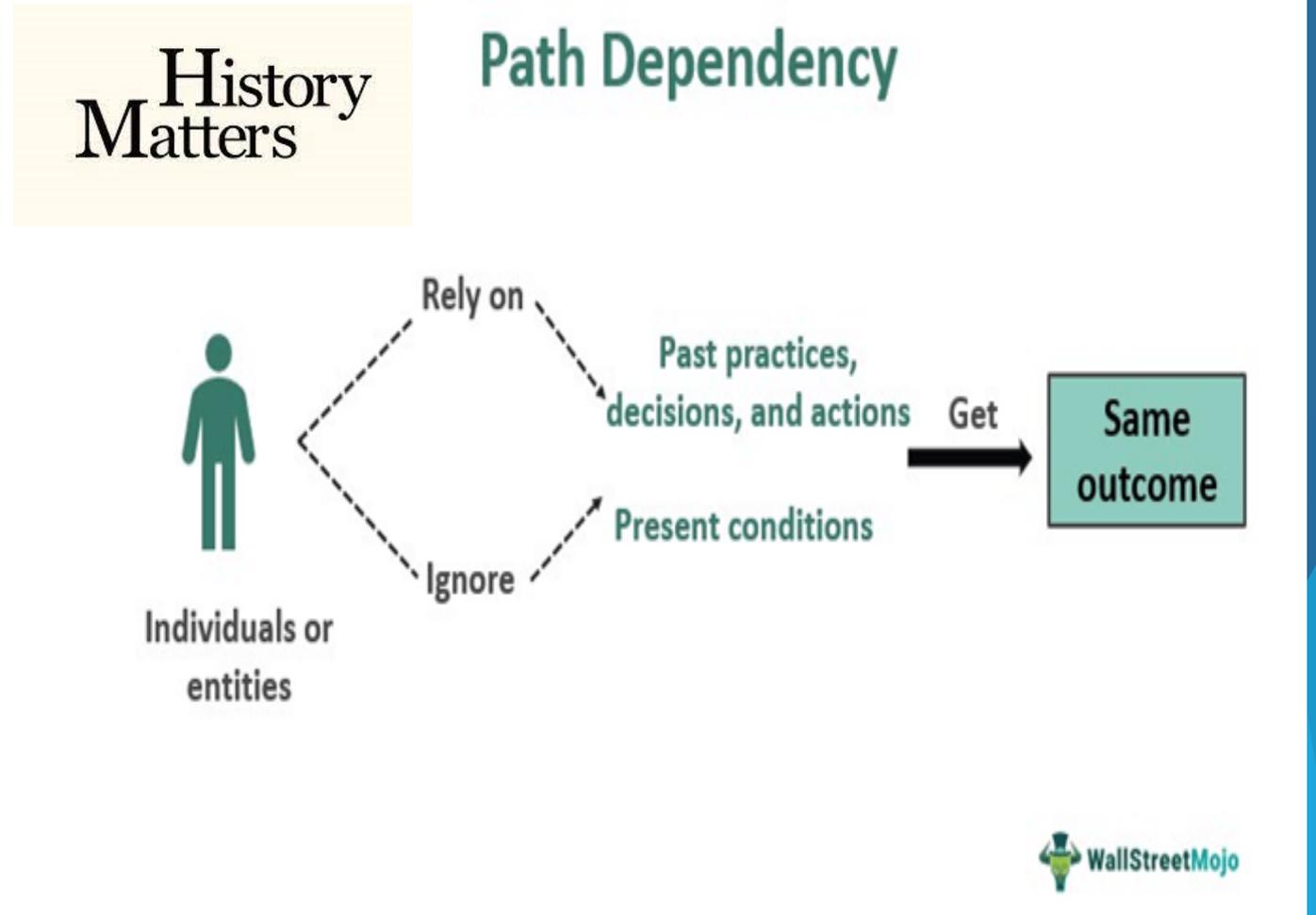
When this occurs, it can lead to the formation of **a policy implementation network.**

The national level actors often dominate, and cross-level and cross-sectoral collaboration are limited.

Wagner, P. M., Torney, D., & Ylä-Anttila, T. (2021). Governing a multilevel and cross-sectoral climate policy implementation network. *Environmental Policy and Governance*, 31(5), 417–431. <https://doi.org/10.1002/eet.1942>

Identifying and Unravelling Persistent Problems

Path Dependency is the tendency to base outcomes on **prior habits, decisions, and actions rather than current circumstances**, even when better options are available.



Identifying and Unravelling Persistent Problems

“The conceptual framework of identifying and unravelling persistent problems is built on:

- 1) the notion of historic development,
- 2) systemic reproduction, and
- 3) path dependency,

further **operationalized** by iteratively combining a **historically informed system analysis** with **an actor-guided system analysis**.”

Operationalization means turning abstract conceptual ideas into measurable observations



Schuitmaker-Warnaar, Tjerk Jan

Identifying and Unravelling Persistent Problems

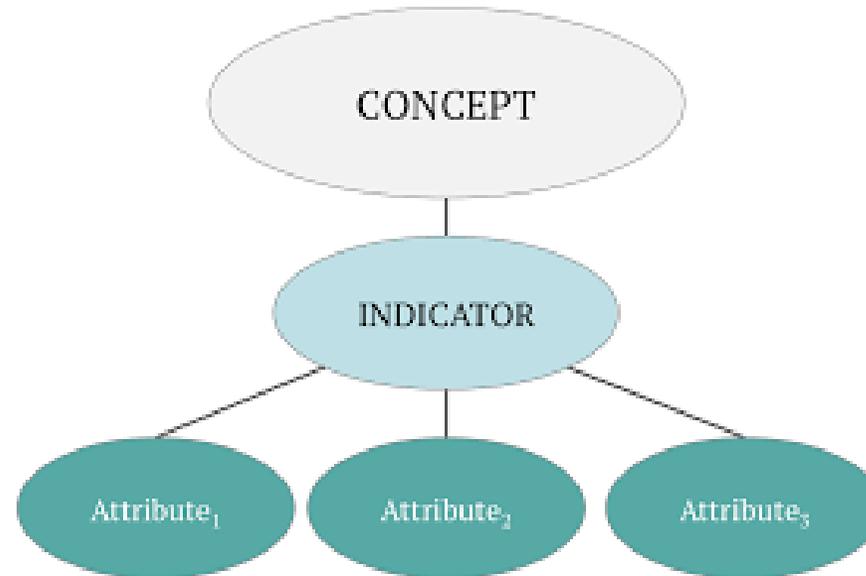
The historically informed analysis focuses on the strongholds of the current system which have negative side effects. The systemic reproduction of these negative side effects can be unraveled by **analyzing how new practices shape their agency in relation to their direct environment.**

A persistent problem then is a systemically reproduced negative side effect of a success factor of the system in focus.“

Schuitmaker-Warnaar, Tjerk Jan. (2012). Identifying and unravelling persistent problems. *Technological Forecasting and Social Change*. 79. 1021–1031. 10.1016/j.techfore.2011.11.008.

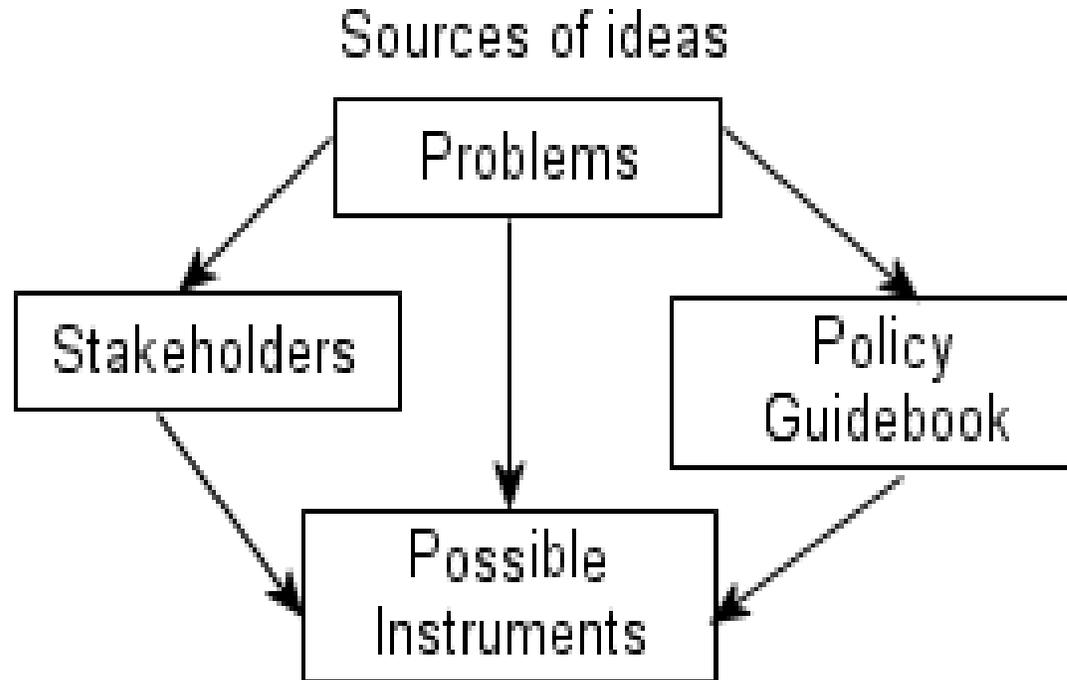
Identifying and Unravelling Persistent Problems

“The operationalization brings the conceptual framework to the actor level, and opens possibilities for investigating how systemically embedded problems manifest themselves in the daily practice of actors that try to take on enduring problems”



Schuitmaker-Warnaar, Tjerk Jan. (2012). Identifying and unravelling persistent problems. *Technological Forecasting and Social Change*. 79. 1021–1031. 10.1016/j.techfore.2011.11.008. <https://www.anyamemensah.com/blog/conceptualize-operationalize>

PUBLIC POLICY INSTRUMENTS



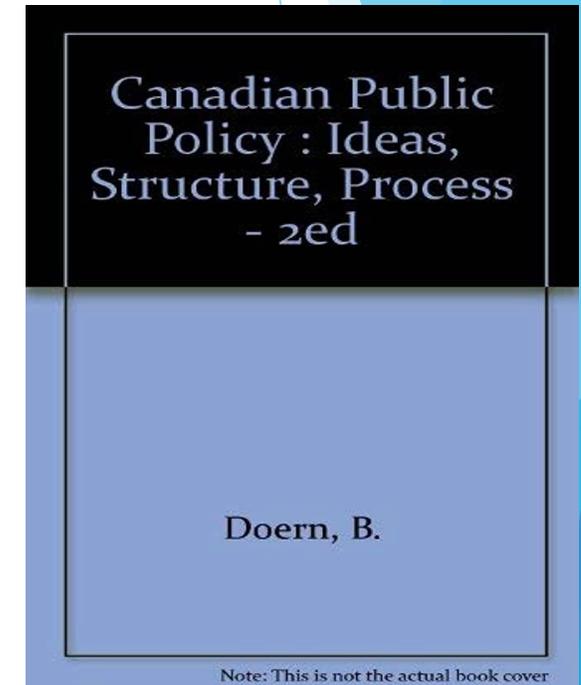
Stakeholders are more or less organized groups of people that could be affected by the implications of a decision.

Policy guidebook brings official expert advice about how to cope with a problem

PUBLIC POLICY INSTRUMENTS

Doern and Phidd (1992, p. 97, based on earlier work by Doern and Wilson, 1974) argue that there are **five** broad **categories**:

- **Self-regulation** (monitoring its own adherence to legal, ethical, or safety standards)
- **Regulation** (including taxation)
- **Exhortation** (i.e., persuasion, warning)
- **Expenditure**
- **Public ownership**



Bruce **Doern** and Richard W. **Phidd** (1992). *Canadian Public Policy: Ideas, Structure, Process*. 2nd ed.; Scarborough: Nelson Canada

NATO INSTRUMENTS (NODALITY, AUTHORITY, TREASURE & ORGANIZATION)

Hood and Margetts (Hood 1983; Hood & Margetts 2007) developed what we call the “NATO scheme,” standing for the different resources that governments have at their disposal to effect policy change:

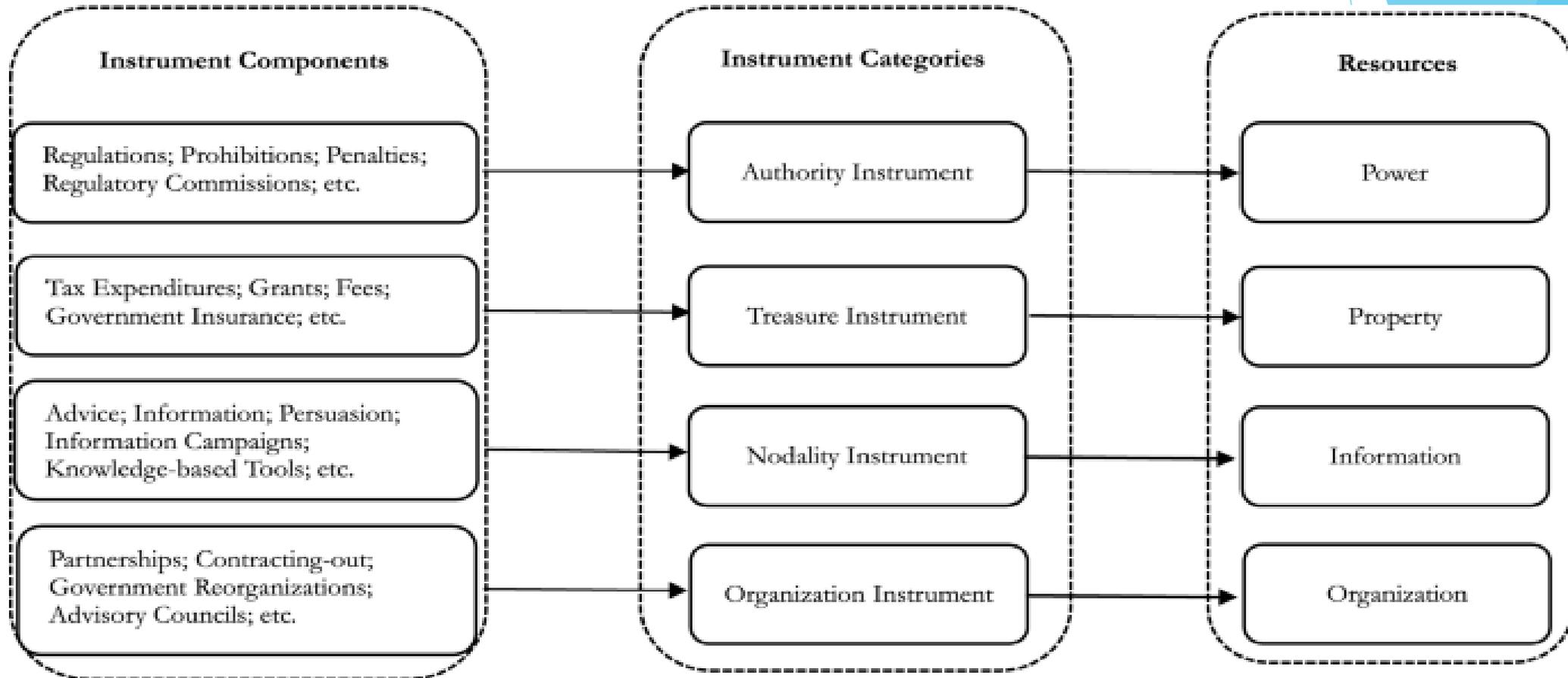
N stands for nodality or information resources

A for authority;

T for treasure or money; and

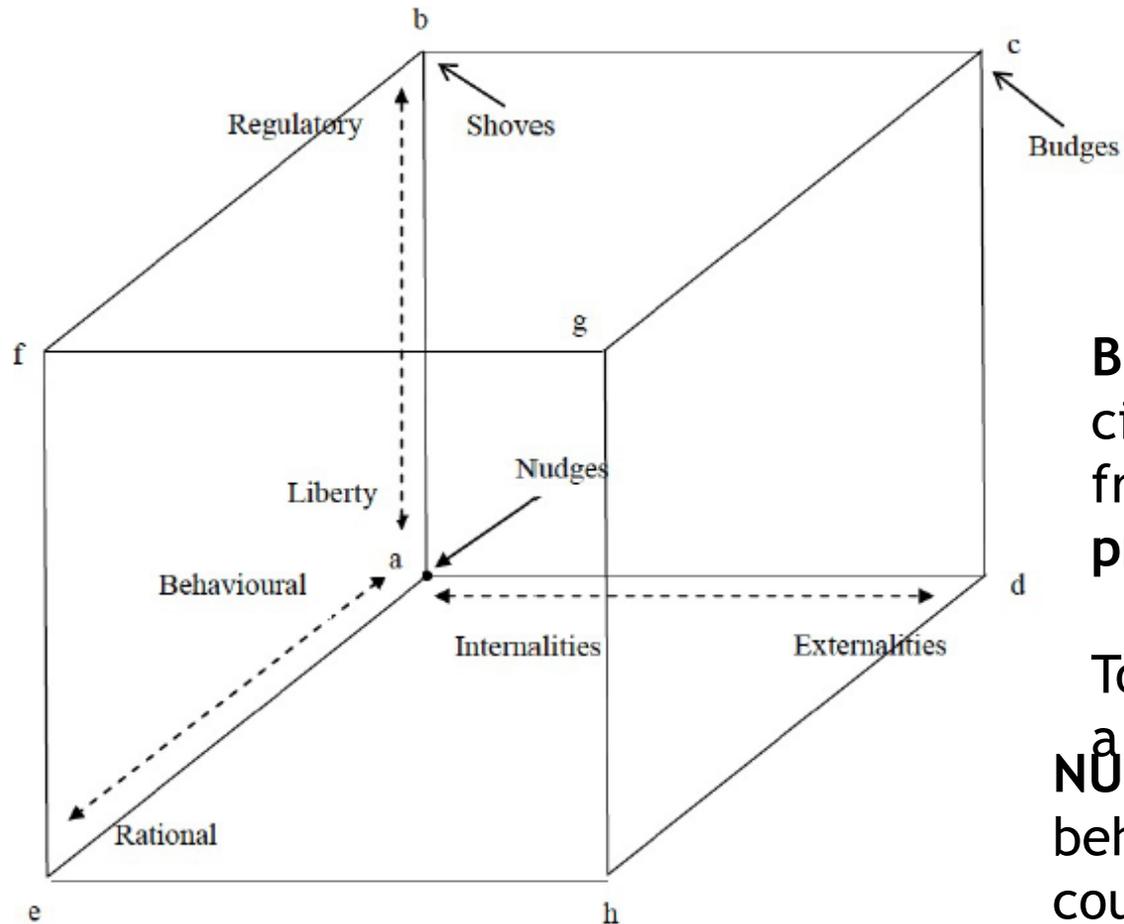
O for organization or personnel.

NATO INSTRUMENTS (NODALITY, AUTHORITY, TREASURE & ORGANIZATION)



HOWLETT, M., RAMESH, M. and PERL, A. (2020). Studying Public Policy: Principles and Processes, 4th Edition, Oxford University Press

REGULATORY & BEHAVIORAL PUBLIC POLICY



SHOVES (mandates, authoritative commands, restrictions, regulations): A ban on smoking



NO SMOKING

BUDGES: A packaging of cigarettes discouraging you from smoking by **avoiding priming**

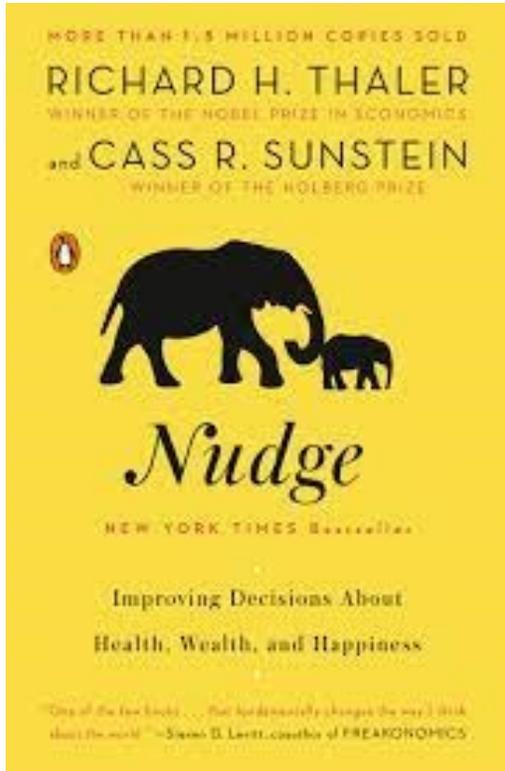


To budge is to move – but just a little bit.
NUDGES: Putting cigarettes behind the checkout counter



Priming: exposure to one stimulus may influence a response to a subsequent stimulus, without conscious guidance or intention

NUDGES (THALER, SUNSTEIN 2008)

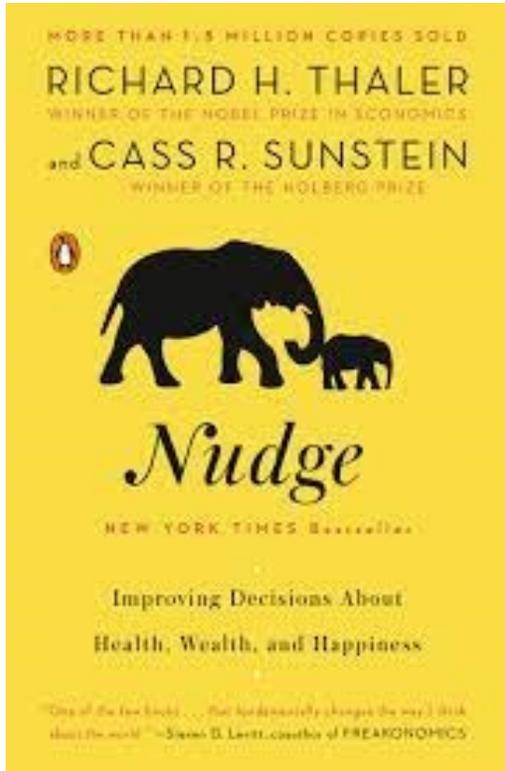


A nudge, as we will use the term, is any aspect of the **choice architecture** that alters people's behavior in a predictable way **without forbidding any options or significantly changing their economic incentives.**

To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting fruit at eye level counts as a nudge. Banning junk food does not.



NUDGE (THALER, SUNSTEIN 2008)

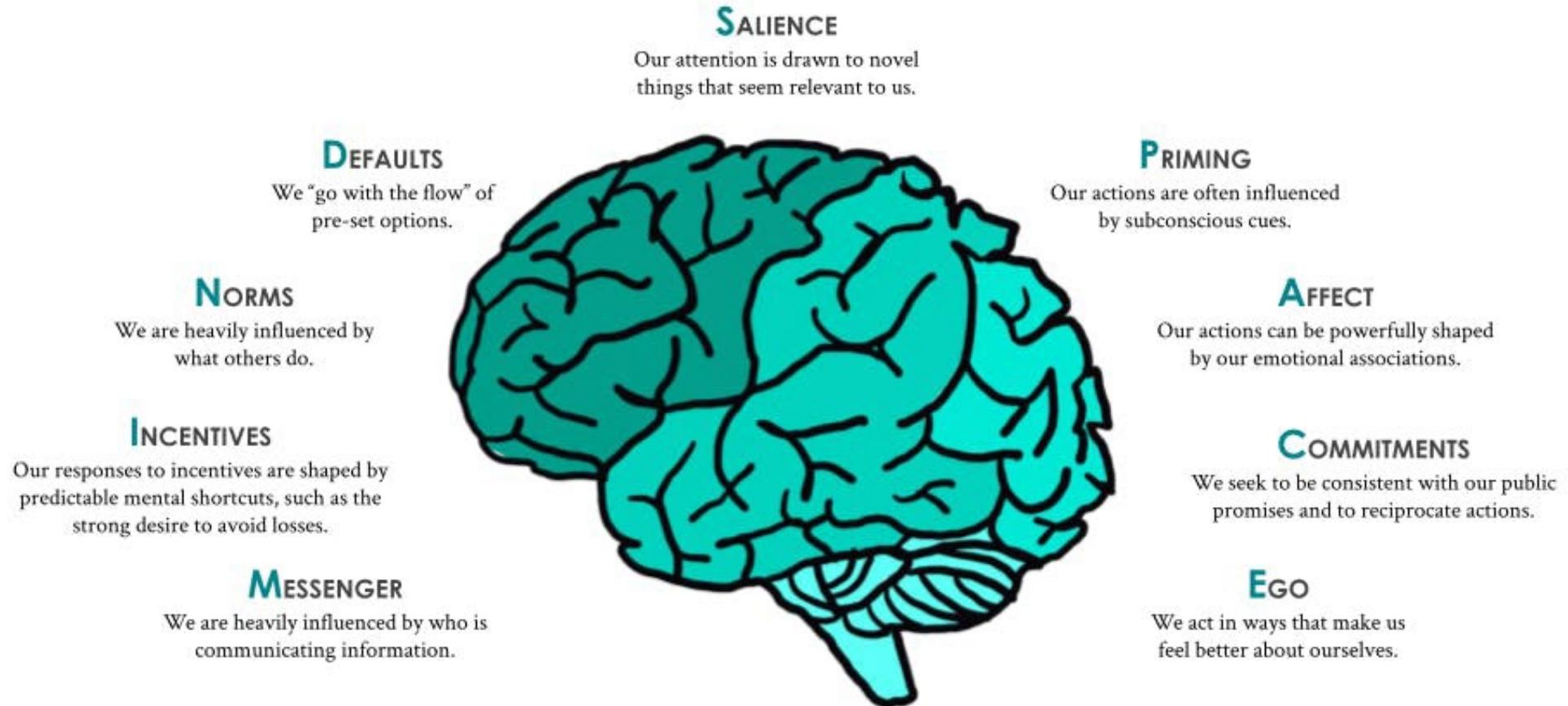


The authors of this book show us that if we know the way people think, we can design an environment in which it will be easier for them to choose the best alternative for themselves, their environment and society.

Using colorful examples from various important aspects of human life, Thaler and Sunstein demonstrate to us that **a thoughtfully constructed "choice architecture" can nudge us toward significantly improving our choices without violating our right to choose.**

MINDSPACE (Dolan et al., 2010)

MINDSPACE is a framework that focuses on 9 forces that drive our behavior.



MINDSPACE (Dolan et al., 2010)

Messenger	We are heavily influenced by who communicates information.
Incentives	Our responses to incentives are shaped by predictable mental shortcuts, such as strongly avoiding losses.
Norms	We are strongly influenced by what others do.
Defaults	We “go with the flow” of pre-set options.
Saliency	Our attention is drawn to what is novel and seems relevant to us.
Priming	Our acts are often influenced by subconscious cues.
Affect	Our emotional associations can powerfully shape our actions.
Commitments	We seek to be consistent with our public promises / pledges and reciprocate acts.
Ego	We act in ways that make us feel better about ourselves.

Food nudges include, for instance,

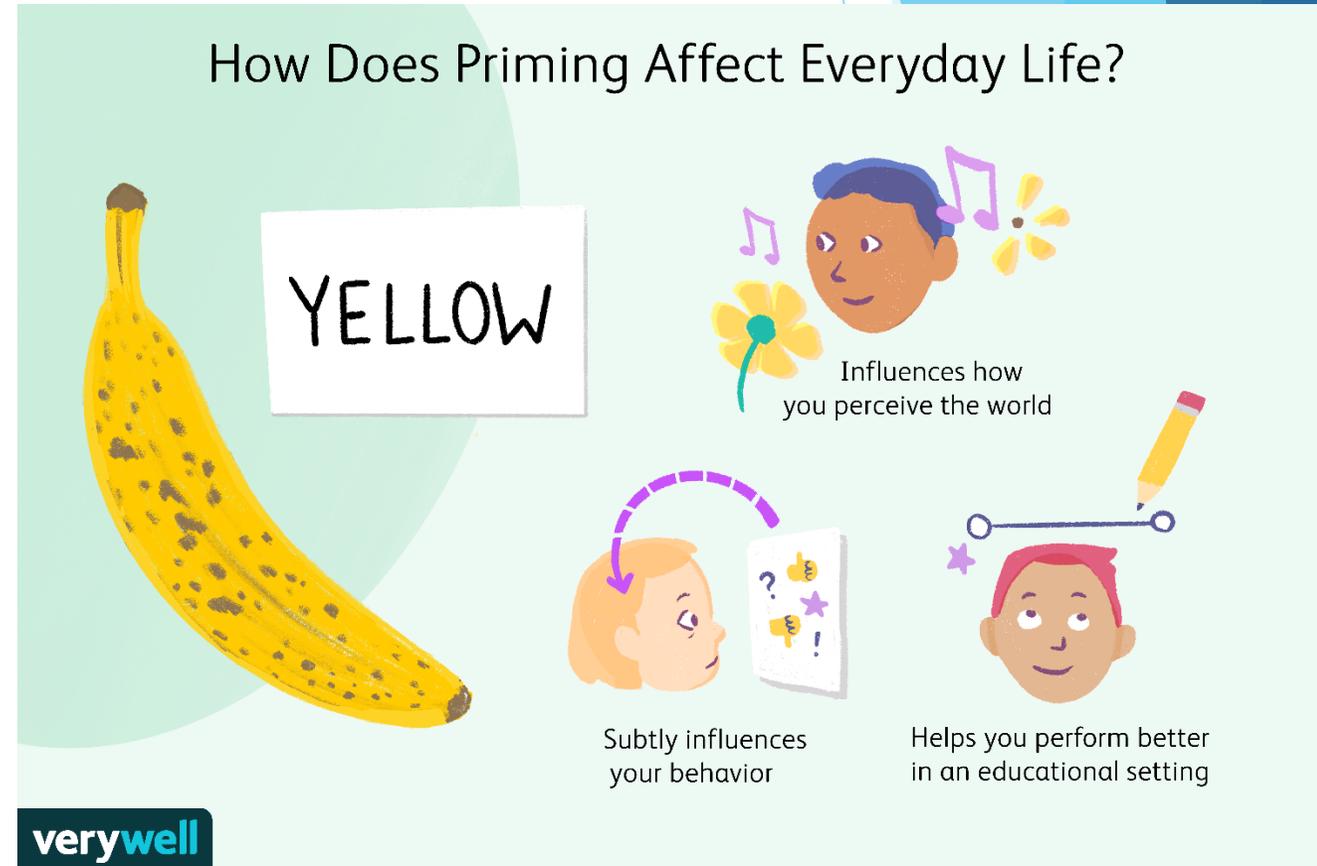
- simplification of information and choices,
- positioning of products in supermarkets and cafeterias at an eye level,
- self-pledges,
- multiple elements of choice architecture (such as defaults or decoy dishes),
- educational messages in school canteens,
- calorie labels,
- sweet-free supermarket cashiers,
- meat-free days in cafeterias.
- priming and framing of messages.

PRIMING: phenomenon whereby exposure to one stimulus (a word, image, smell or sound) influences a response to a subsequent stimulus, without conscious guidance or intention.

FRAMING: a cognitive bias where people decide on options based on whether the options are presented with positive or negative connotations

PRIMES THAT GUIDE US

PRIMING: phenomenon whereby **exposure** to one **stimulus** (a word, image, smell or sound) **influences** a response to a subsequent stimulus, **without conscious guidance or intention**.



<https://www.verywellmind.com/priming-and-the-psychology-of-memory-4173092>

PRIMING - ASSOCIATION MACHINE

Examples of How Priming Influences Behaviour

Here is the word — S _ _ p

Did you say it is soup?

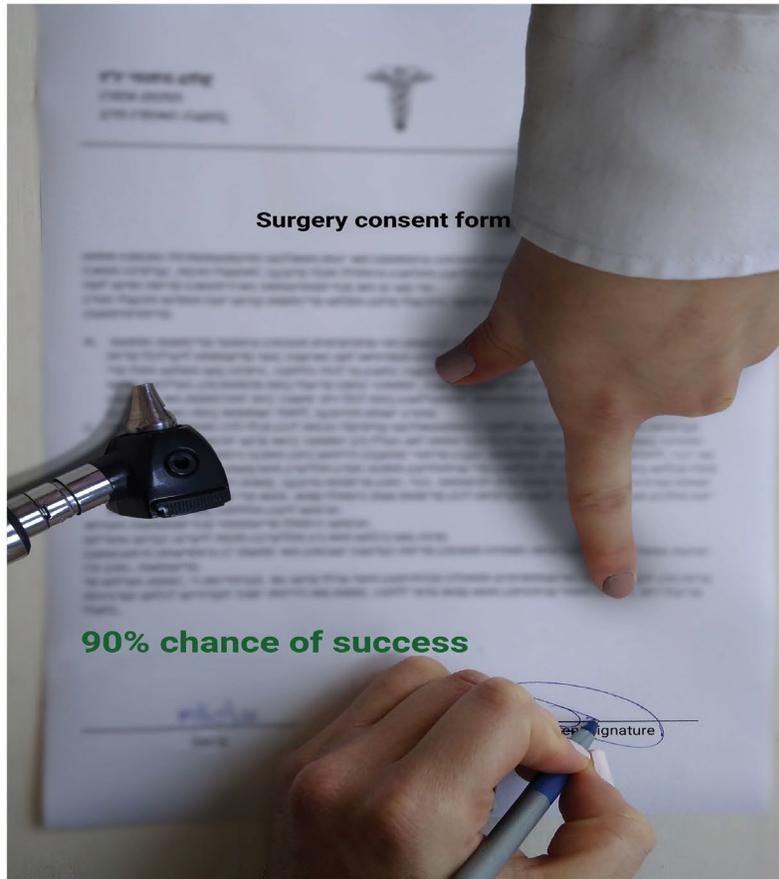
Ok, what if I go and take a shower? What word

will it be now? S _ _ p

Did you say soap this time?

Adding “bio” or “all-natural” to your product primes people into getting thoughts of nature or farms.

FRAMING EFFECT

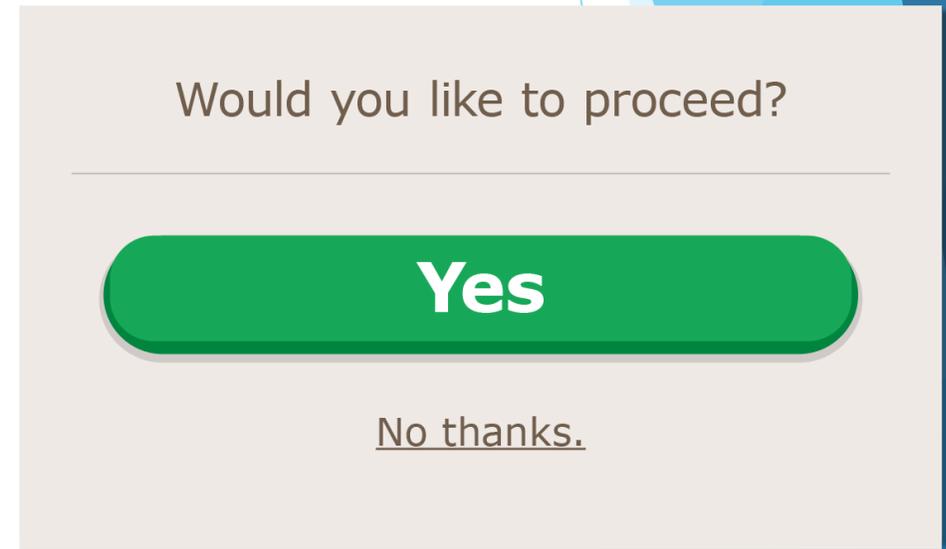


90% chance of surgery success
vs.
10% chance of complications

DEFAULTS

The default effect **explains the tendency to generally accept the default option in a strategic interaction.**

Inertia, procrastination, and lack of self-control are personality traits that argue for changing the default behavior **from “opt-in” to “opt-out”** to get the desired result.



Would you like to proceed?

Yes

No thanks.

<https://ico.org.uk/for-organisations/guide-to-data-protection/ico-codes-of-practice/age-appropriate-design-a-code-of-practice-for-online-services/13-nudge-techniques/>

DEFAULTS

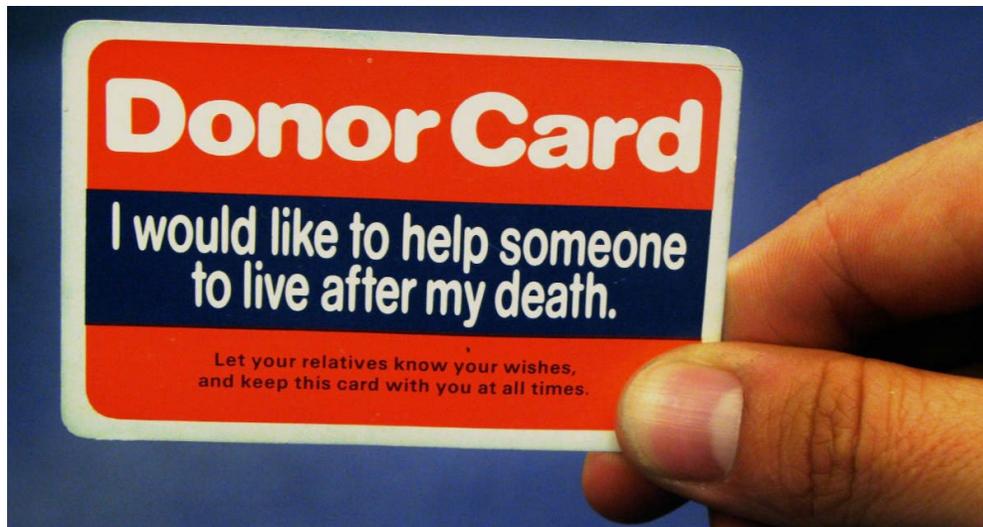
Madrian & Shea (2001) documented a significant change in the **participation of employees in the retirement scheme** of a large US corporation before and after a transition to automatic registration (i.e., a change from “opt-in” to “opt-out” of the system).



An initial contribution percentage and investment allocation were set by the company (the “choice architect”) and changing them required an affirmative act by the employee. **Employee participation in the system was significantly higher with automatic registration (“opt-out”).**

DEFAULTS

According to Johnson and Goldstein (2004), **people are more likely to donate organs when they are required to opt out of donating than when they are required to opt in.**



<https://bioedge.org/uncategorized/will-britains-new-opt-out-organ-donation-system-work/>

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<https://www.membershipinnovation.com/insights-and-ideas/an-overview-of-the-various-types-of-nudges>

Types of Social Norms



Folkway

Norm that stems from and organizes casual interactions



Mores

Norm that structures the difference between right and wrong



Taboo

Strong negative norm; violating it results in extreme disgust



Law

Norm that is formally inscribed at the state or federal level

Social norms are typically defined as “**rules and standards that are understood by members of a group, and that guide or constrain social behaviors without the force of law**”(Cialdini and Trost, 1998, p. 152).

Crossman (2021) distinguishes four key types of norms, with differing levels of scope and reach, significance and importance, and methods of enforcement. These norms, in order of increasing significance include **folkways, mores, taboos and laws.**

oughtCo.

Folkways (e.g., the concept of appropriate dress, the practice of raising one's hand to take turns speaking in a group) are “norms that stem from and organize casual interactions and emerge out of repetition and routines” (Sumner, 1906). We engage in them to satisfy our daily needs.

Mores (e.g., religious doctrines) structure the difference between right and wrong.

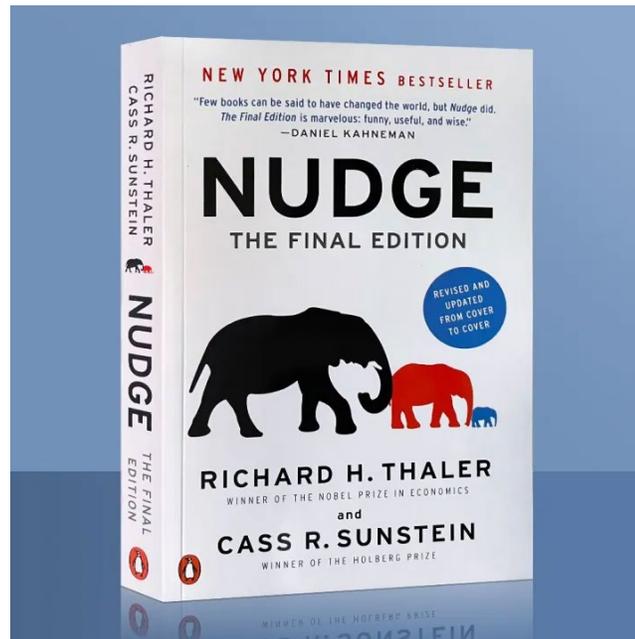
Taboos (e.g., eating pork in some Muslim cultures) are a very strong negative norm; it is a prohibition of certain behavior that is so strict that violating it results in extreme disgust and even expulsion from the group or society (Crossman, 2021).

Laws are norms that are issued and enforced by state authorities. Black (1972) views law as “ a social control (the regulation over the actions of individuals and groups) by government.”

Social norms signal appropriate behavior for most people.

BEHAVIORAL KNOWLEDGE → NUDGES

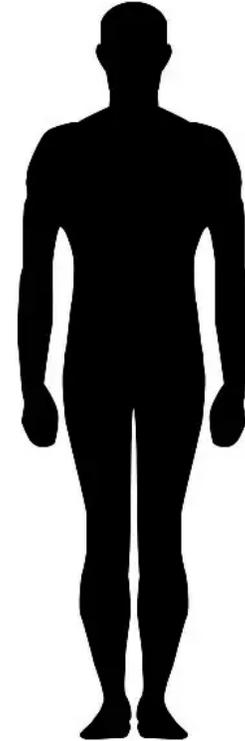
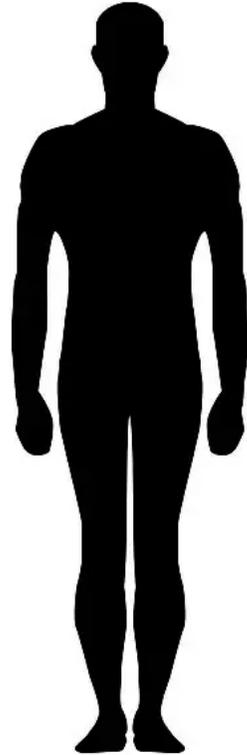
“If we really want to understand how we can nudge people into **making better choices**, it's important to understand **why they often make such poor ones.**”





Which of them seems **BETTER** to you?

Love
Care
Normal
Thief
Dark



Dark
Thief
Normal
Care
Love

Let's get started with a question. Do you think you make your own decisions? Is it easy to manipulate you? Before you answer, let me show you something. I will describe the character traits of two persons using 5 words. Try to decide which person is good and which is evil. Choose the first answer that crosses your mind.

Ready? Person 1 – Love, Care, Normal, Thief, Dark

Person 2 – Dark, Thief, Normal, Care, Love

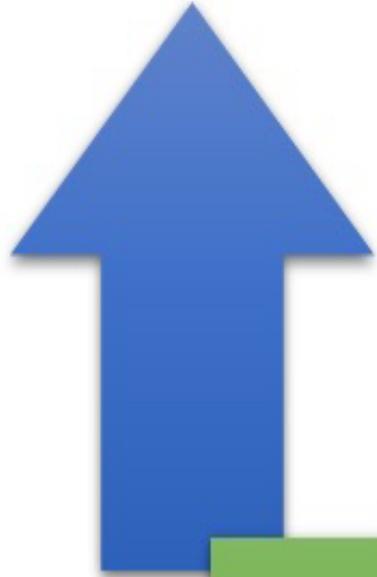
I am pretty sure that most of you will consider Person 1 to be better than Person 2. But the words I told you were the same with both. I just changed the order, which could make you decide in a wrong way.

To explain why it is easy to influence the others, I will introduce the book called Thinking fast and slow by Daniel Kahneman, an economist and a psychologist who was awarded the Nobel Prize in 2002. The aim of the lecture will be to get you acquainted with Kahneman's groundwork of system 1 and system 2 and factors that influence our behavior.

To simplify analyses the two systems of thinking, imagine that there are 2 PEOPLE sitting in your head. They are called System 1 and System 2. System 1 works automatically, effortlessly and uses intuition. However, System 2 is very slow, demands concentration, analysis, calculation and makes well considered steps.

In terms of evaluation, both systems are crucial. If you did not have System 1, you wouldn't automatically run away from a bear. If you did not have System 2, you could not for instance figure out mathematical problems.

Each system has its own meaning. The problem arises when we use incorrect system in a particular situation. Mostly it is System 1 that comes fast before System 2 and makes us decide in a wrong way.



HALO EFFECT

- Positive Impression
- Higher Equity
- More Trust & Better Value



HORN EFFECT

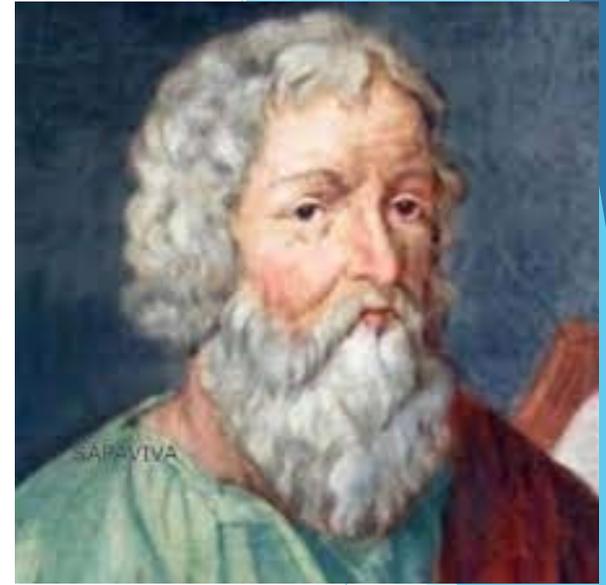
- Negative Impression
- Lower Equity
- Lesser Value & Low Trust



DECISION MAKING

The process of making choices by

- 1) identifying a decision,
- 2) gathering information and
- 3) assessing alternative resolutions



HIPPOCRATES

*“Life is short
and art long
the crisis fleeting
experience perilous
and decision difficult”*

7 STEPS TO EFFECTIVE DECISION MAKING

Decision making is the process of making choices by identifying a decision, gathering information, and assessing alternative resolutions.

Using a step-by-step decision-making process can help you make more deliberate, thoughtful decisions by organizing relevant information and defining alternatives. This approach increases the chances that you will choose the most satisfying alternative possible.



<https://www.umassd.edu/fycm/decision-making/process/>

RATIONAL CHOICE THEORY

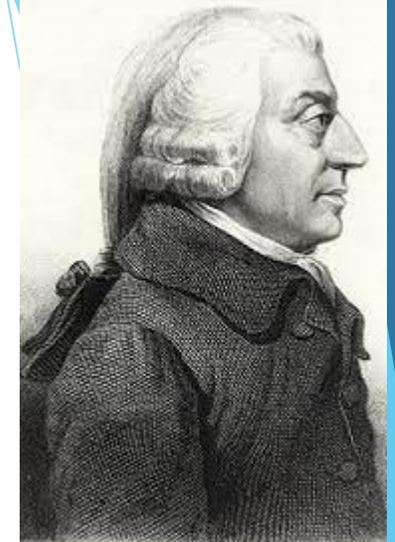
“Rational choice theory states that individuals use rational calculations to make rational choices and achieve outcomes that are aligned with their own *personal objectives*.”

These results are associated with **maximizing an individual's self-interest, benefit and utility for them.**

Using rational choice theory is expected to result in outcomes that provide people with **the greatest benefit and satisfaction**, given the limited option they have available.

It entails 3 concepts: of rational actors, self-interest, and the concept of invisible hand.

<https://www.investopedia.com/terms/r/rational-choice-theory.asp>



Adam Smith (1723-1790) was one of the first economists to develop the underlying principles of the rational choice theory.

The Wealth of Nations laid the foundations of classical **economics**.

RATIONAL CHOICE THEORY

Capitalism fueled by self-interest is ultimately the best way to a thriving economy.

Because of human desire for money, success, or fame, they will be motivated to improve their quality of work, products, and compete with others.

A metaphor of the invisible hand (i.e., the market as a self-correcting mechanism): the “laws” that regulate the division of the entire “wealth” of the nation among the 3 great classes -laborers, landlords, and manufacturers.

<https://www.britannica.com/biography/Adam-Smith/The-Wealth-of-Nations>

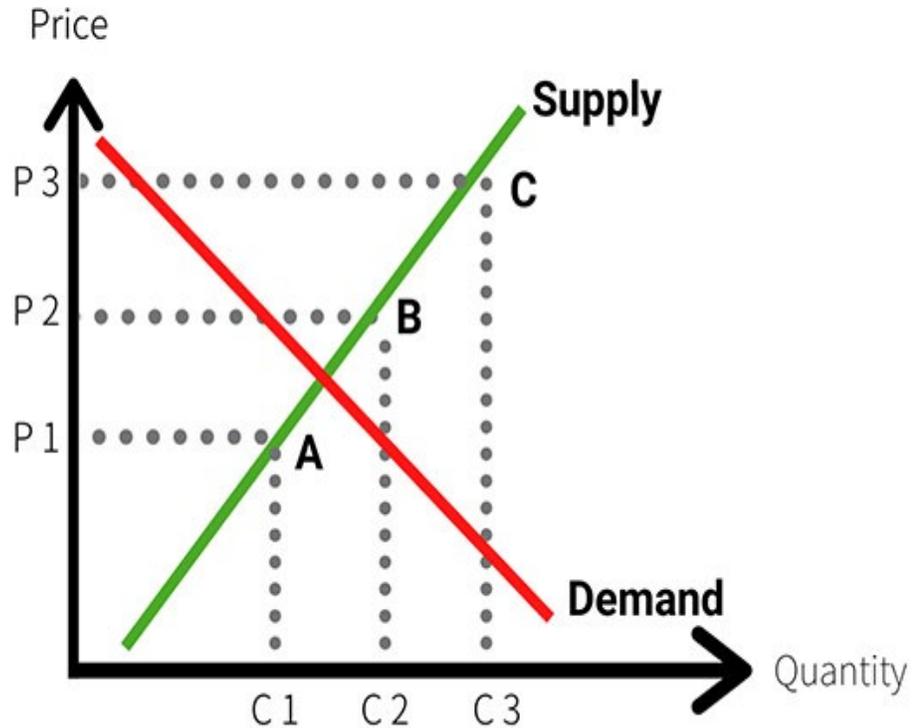
Invisible Hand



<https://medium.com/@thadcollins/what-is-the-invisible-hand-98ffe691d6a3>

RATIONAL CHOICE THEORY

Law of supply and demand



The **law of supply and demand** is the backbone of a market economy.

A, B and C are points reflecting a direct correlation between quantity demanded (Q) and price (P).

Generally, a **low supply and high demand increases price**, whereas the greater the supply and the lower the demand, price tends to fall.

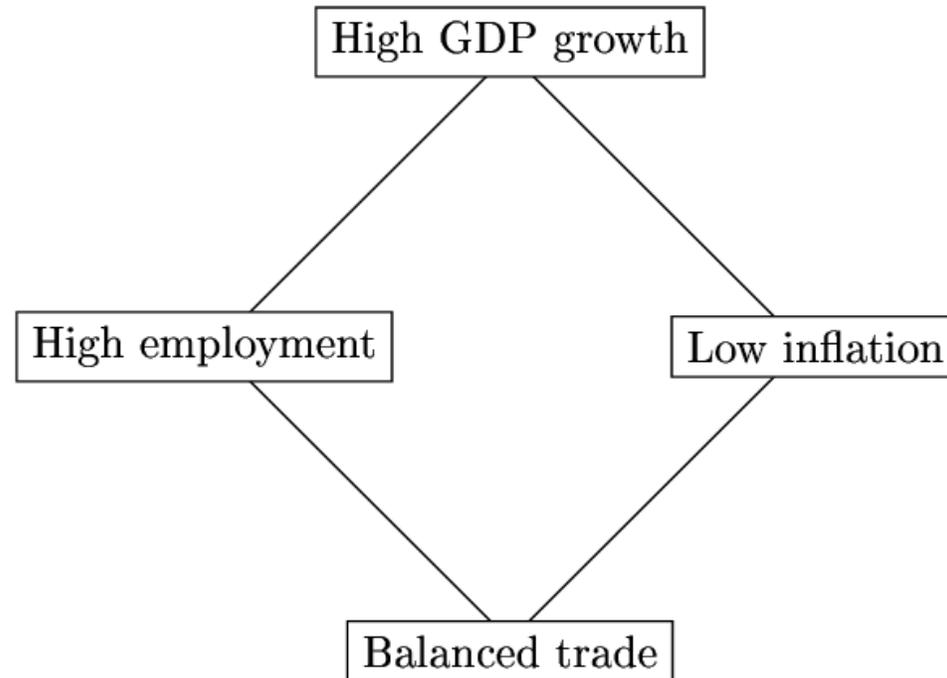


<https://www.elearnmarkets.com/blog/relationship-between-demand-and-supply/>

<https://www.efficacy.com/law-of-supply-and-demand/>

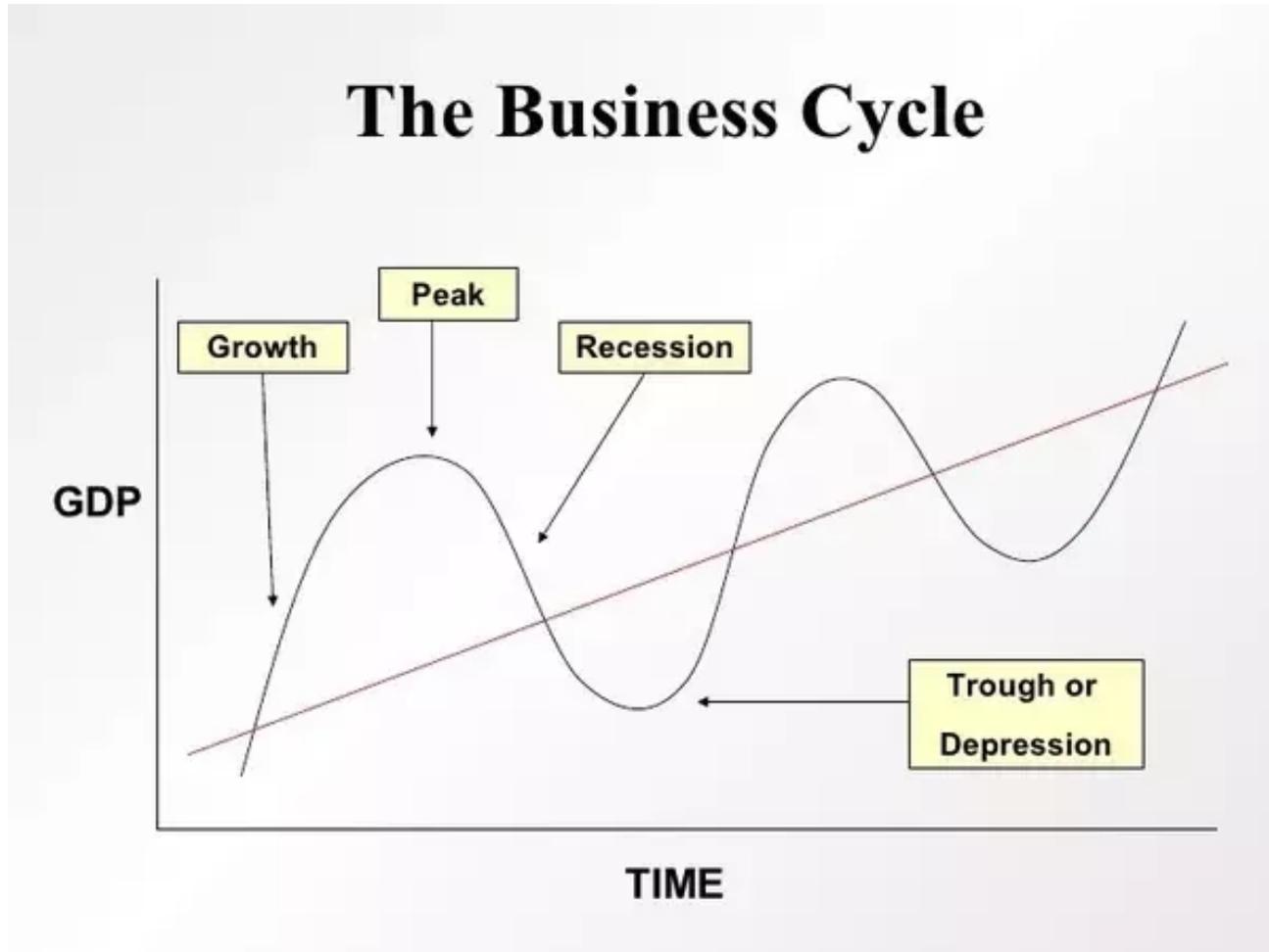
THE MAGIC SQUARE OF ECONOMIC POLICY

The Magic Square of Economic Policy highlights **four main goals (indicators) of economic policy**: growth, full employment, price stability, and balanced trade.



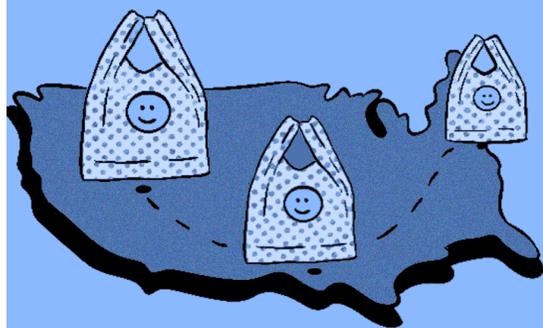
Oliver Picek, 2017. "The "Magic Square" of Economic Policy measured by a Macroeconomic Performance Index," Working Papers 1702, New School for Social Research, Department of Economics.

UNEMPLOYMENT, INFLATION AND GDP GROWTH OVER TIME



Unemployment, inflation and economic growth tend to **change cyclically** over time.

THE NOMINAL AND REAL GROSS DOMESTIC PRODUCT (GDP)



GDP
[ˈjē ˈdē ˈpē]

The total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period.

Nominal GDP is GDP given in **current prices**, without adjustment for inflation.

Real GDP tracks the total value of goods and services calculating the quantities but **using constant prices** that are **adjusted for inflation**.

Real GDP Formula



$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{Deflator}}$$



GDP FORMULAS

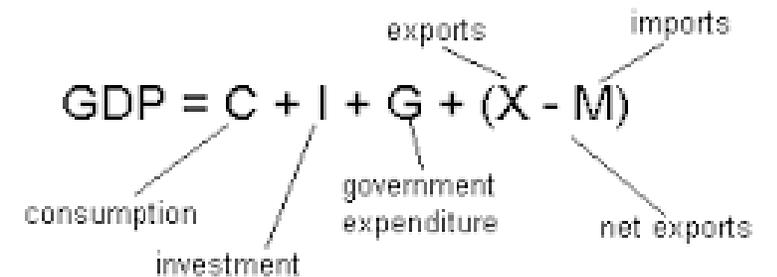
GDP Formula



Expenditure Approach = $C + I + G + NX$

Income Approach = Total National Income + Sales Taxes + Depreciation + Net Foreign Factor Income

Value Added Approach = Gross Value of Output – Value of Intermediate Consumption



Value added approach consists in calculating an industry or sector's output and subtracting its intermediate consumption (the goods and services used to produce the output) to derive its value added.

Three Important Types of Unemployment

1 Frictional:

This occurs naturally when workers are between jobs, or have just graduated and are looking for work for the first time.



2 Cyclical:

The economy regularly goes through ups and downs; when it enters a recession, more people become unemployed.



3 Structural:

When there is a mismatch between the skills people have learned and the skills the job market requires, this causes structural unemployment.



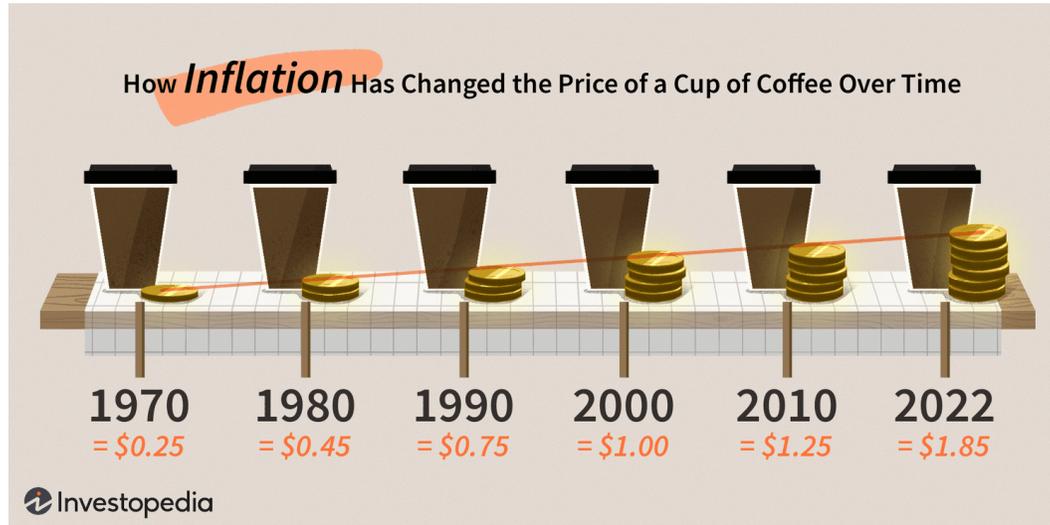
Unemployment Rate Formula

$$U = \frac{\text{Unemployed People}}{\text{Labor Force}} \times 100$$



Okun's law is an observation that a 1% change in unemployment tends to accompany a change in GDP of about 2-3%

INFLATION (a general increase in prices and fall in the purchasing value of money)



- an increase in energy, material, labor and other costs
- high consumer demand
- an increase in money supply by the Government to cover its deficits and pay off debts by printing more currencies

Cost push Inflation

Demand pull Inflation

Moneytary Inflation

www.arthikdisha.com

INFLATION

An increase in inflation means that prices have risen. With an increase in inflation, there is a decline in the purchasing power of money, which reduces consumption and therefore **real GDP decreases**.

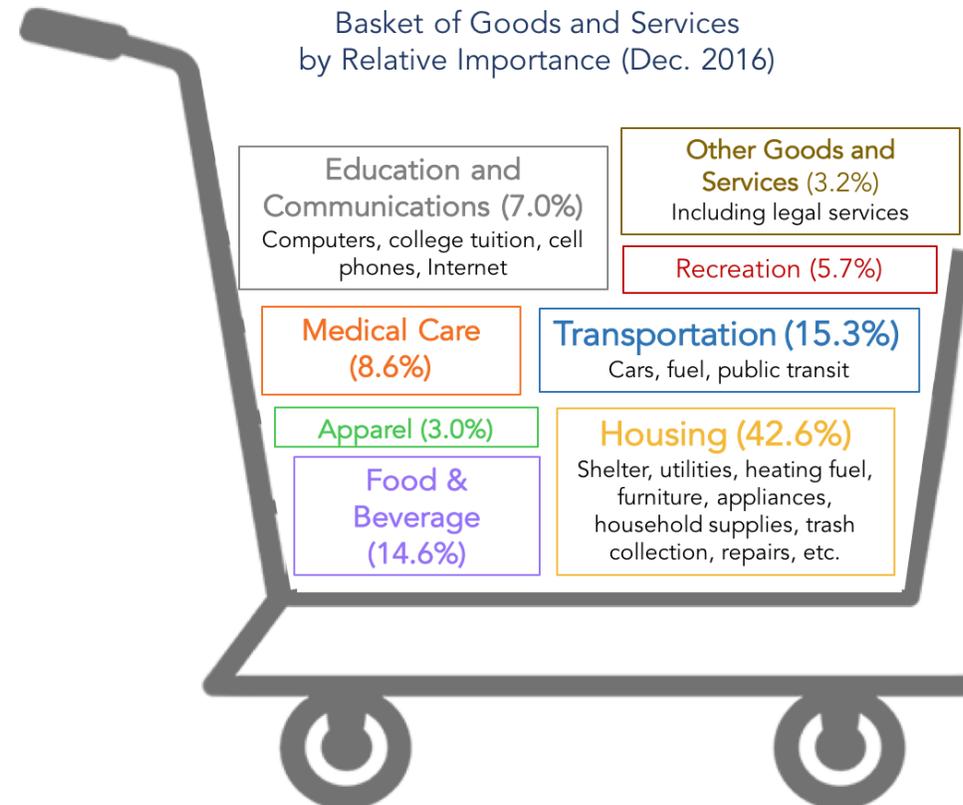
Inflation Formula

$$\text{Rate of Inflation} = \frac{\text{CPI}_{x+1} - \text{CPI}_x}{\text{CPI}_x}$$



Consumer Price Index (CPI)

Basket of Goods and Services
by Relative Importance (Dec. 2016)

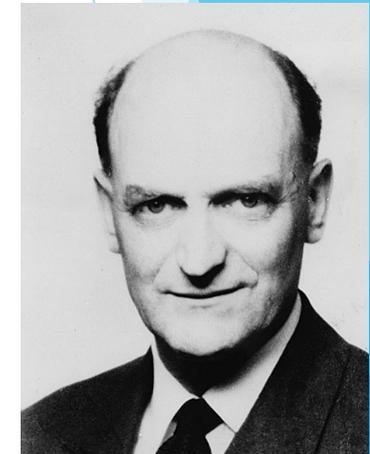


INFLATION vs. UNEMPLOYMENT



Phillips curve (1958) in short run suggests **as unemployment falls, and the economy gets closer to full employment – inflation rises.**

A fall in demand which causes inflation to fall, will cause lower economic growth and a rise in the unemployment rate.



William Phillips
(1914-1975)
a New Zealand economist

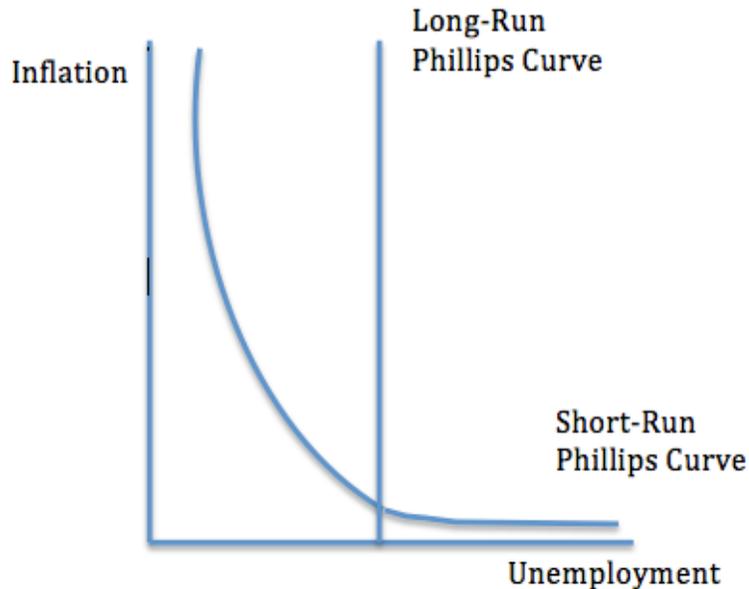
In the UK in 2008, inflation fell because of the recession. This caused a rise in unemployment. Inflation increased in 2010-12 because of cost-push factors.

INFLATION vs. UNEMPLOYMENT

There is **no relationship** between the unemployment rate and inflation in the long-run

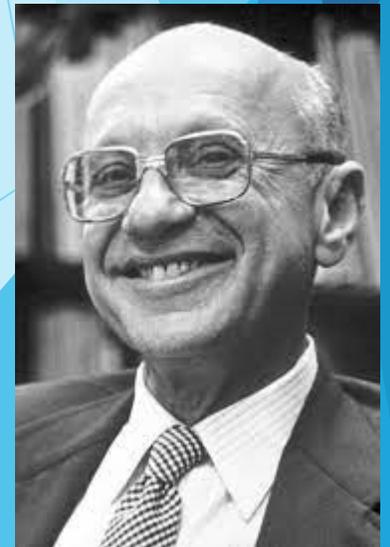
Milton Friedman understood the long-run Phillips curve as a set of points in which **the actual rate of inflation equals the expected value** and at the same time the actual rate of unemployment corresponds to the natural rate of unemployment.

In the long run, the Phillips curve is vertical, at the level of the natural rate of unemployment.



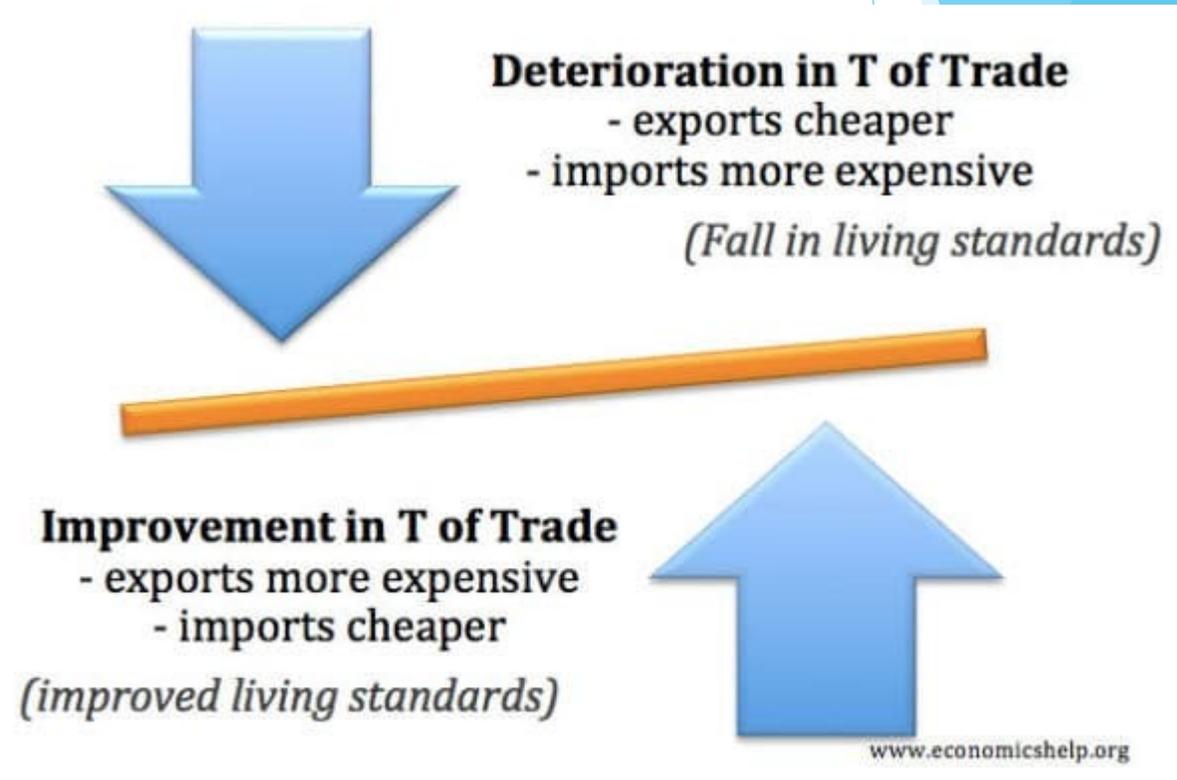
The Phillips Curve

Milton Friedman
(1912-2006)
American economist



BALANCE OF TRADE

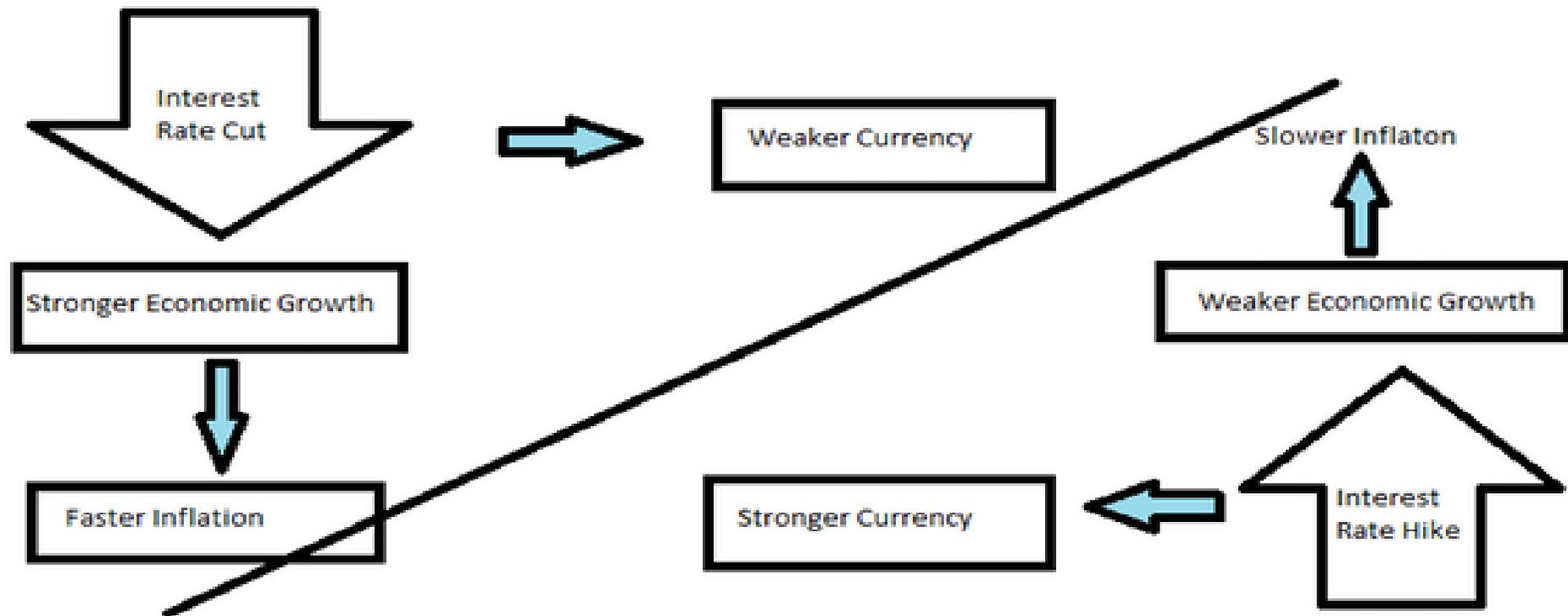
Balance of trade (BOT) is the difference between the value of a country's exports and the value of a country's imports for a given period.



<https://www.economicshelp.org/blog/68/trade/balance-of-trade-and-terms-of-trade/>

<https://www.investopedia.com/terms/b/bot.asp>

INTEREST RATES, RATES OF EXCHANGE AND INFLATION



PUBLIC GOODS AND (BOUNDED) RATIONALITY

What are your nations'
government spending
priorities?



CZECH STATE BUDGET EXPENSES (2023 vs. 2022)

Traditionally, the **Ministry of Labor and Social Affairs** has the highest expenditure, namely 847.5 billion crowns. This is a year-on-year increase of 89.5 billion crowns.

The **Ministry of Defense** should receive almost 21 billion crowns more, namely 110 billion CZK.

The **Ministry of Education** should receive 1.7 billion crowns more for expenses, i.e., 251.2 billion crowns.

CZECH STATE BUDGET EXPENSES (2023 vs. 2022)

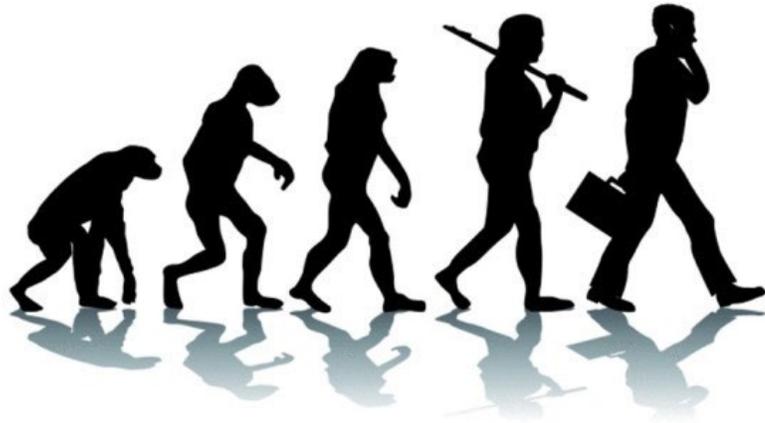
On the contrary, the budget of the Ministry of **Transport** was reduced by approximately 25 billion crowns to 82.3 billion crowns.

The costs of the **state debt** should rise by 15 billion to 65 billion crowns.



<https://www.ceskenoviny.cz/zpravy/mf-v-navrhu-rozpoctu-2023-zvysilo-nebo-nechalo-vydaje-vetsine-kapitol/2215980>

<https://news.wfsu.org/state-news/2021-08-18/florida-tax-revenues-get-2-6-billion-boost>



AwesomeFinTech

Homo economicus is a theoretical abstraction that some economists use to describe a rational human being.

read more about

Homo Economicus
www.awesomefintech.com/terms/homoeconomicus/

The axiom of **homo economicus** assumes that man is a **perfectly rational agent** who is a **selfish** individualist pursuing his goals.

Since he is a perfectly rational decision-maker, having enough information to make his optimal decision, he always chooses the variant that leads to the best possible result. It is to maximize personal gain and minimize losses.

Models based on the axiom of homo economicus assume this rational behavior.

Do we think and act rationally?

(sensibly, logically, reasonably, intelligently,
intellectually)

How do we know? →

Axioms of rational preferences



RATIONAL CHOICE THEORY

Do we act rationally? How do we know? →
Axioms of rational preferences

1. **Non-satiation of Preferences** - a larger number of goods is always preferred over a smaller amount if they are "good" goods

Option A (pcs): Apple = 5, Orange = 3, Banana = 2

Option B (pcs): Apple = 6, Orange = 4, Banana = 2

In this situation, utility from Option B $>$ A, as it contains more apples and oranges with bananas being constant.

RATIONAL CHOICE THEORY *(continued)*

Do we act rationally? How do we know? →
Axioms of rational preferences

2. **Transitivity** - if the basket of goods A is better than B and at the same time B is better than C, it holds that A is better than C.

Transitivity assumes that the individual's choices are **internally consistent**.

3. **Diversity (convexity)** - the consumer prefers average consumption to extremes (e.g., food and drink consumption)

RATIONAL CHOICE THEORY *(continued)*

Do we act rationally? How do we know? →
Axioms of rational preferences

4. **Utility maximalization** - the consumer strives for the most preferred goods.
5. **Continuity** - There is a set of goods separating preferred goods from non-preferred ones.
If A is preferred to B, then situations “close to” A must also be preferred to B
6. **Completeness** - every two baskets of goods can be compared in terms of consumer preference



Think about lifetime situations in which you acted rationally / irrationally. Consider the factors, reasons, consequences...

ADAM SMITH (CLASSICAL OR BEHAVIORAL ECONOMIST?)

The *Wealth of Nations* laid the foundations of classical economics.

However, Smith writes in his *Theory of Moral Sentiments* (1759, p.22): “There are some situations which bear so hard upon human nature, that the greatest degree of self-government, which can belong to so imperfect a creature as man, is **not able to stifle**, altogether, the voice of human weakness, or reduce the violence of the **passions** to that pitch of moderation, in which the impartial spectator can entirely enter into them.”

<https://www.britannica.com/biography/Adam-Smith/The-Wealth-of-Nations>



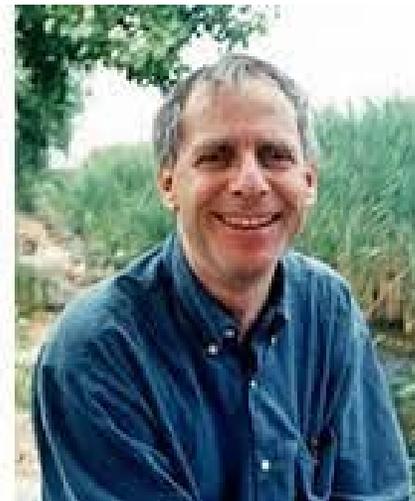
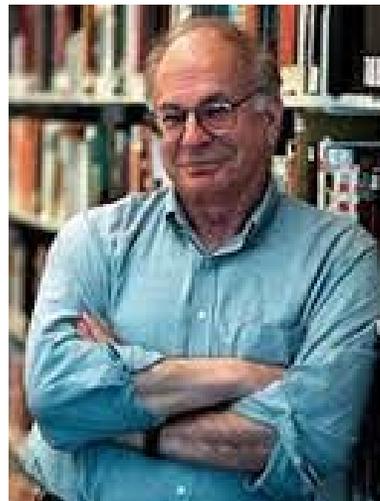
„Existují situace, které se tak těžce snášejí s lidskou povahou, že i nejvyšší míra sebeovládání, které je tak nedokonalé stvoření jako člověk vůbec schopno, nedokáže úplně potlačit hlas lidské slabosti nebo omezit sílu emocí na tak mírnou intenzitu, při které se k nim může nestranný pozorovatel přidat..“

BEHAVIORAL PUBLIC ADMINISTRATION

Herbert Simon's seminal work Administrative Behavior (1947)



Daniel Kahneman and Amos Tversky (1979) - Prospect Theory
'Behavioral turn' in economics since 2000 (Kahneman Nobel Prize in 2002)
- overuse of heuristics, cognitive laziness



RECENT NOBEL PRIZE WINNERS

Richard Thaler (2017) and his theory of nudging

Abhijit Banerjee, Esther Duflo and Michael Kremer (2018) for the utilization of experimental approaches towards poverty rate reduction

David Card (2021) for his job market related experiments

Joshua Angrist and Guido Imbens (2021) for their methodological approach to the analysis of causal relations.

Douglas Diamond and Philip H. Dybvig (2022) for research on banks and financial crises

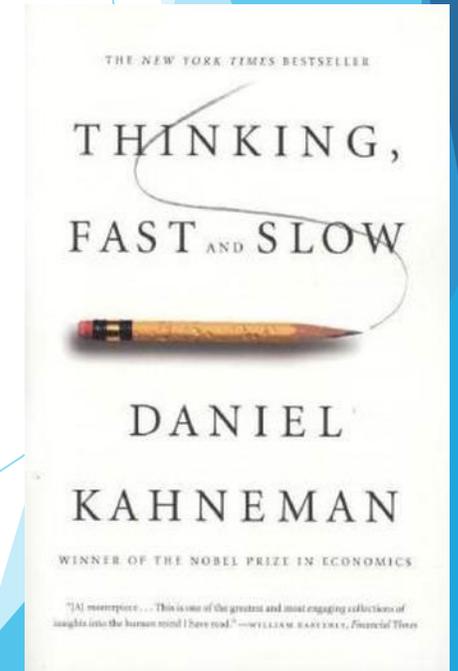
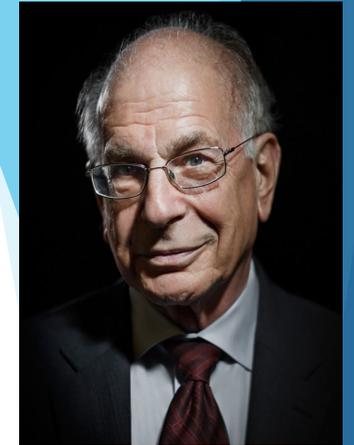
Claudia Goldin (2023) for having advanced our understanding of women's labour market outcomes

Daniel Kahneman (* March 5, 1934, Tel Aviv, Israel) is a respected Israeli-American psychologist at the Department of Psychology at Princeton University.

He is the winner of the **Nobel Prize in Economics in 2002** for his contribution to the integration of knowledge from **psychological research into human judgment and decision-making under uncertainty.**

Together with Amos Tversky, he established a descriptive theory known as the **prospect theory** (in contrast to the utility theory), which is based on several characteristics observed in practice that **deny rationality in decision-making.**

In 2015, he was named **7th most influential economist** in the world by The Economist.



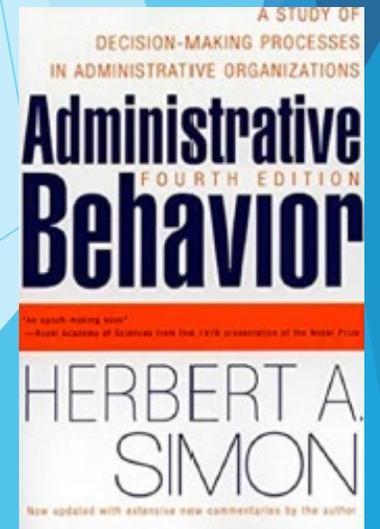
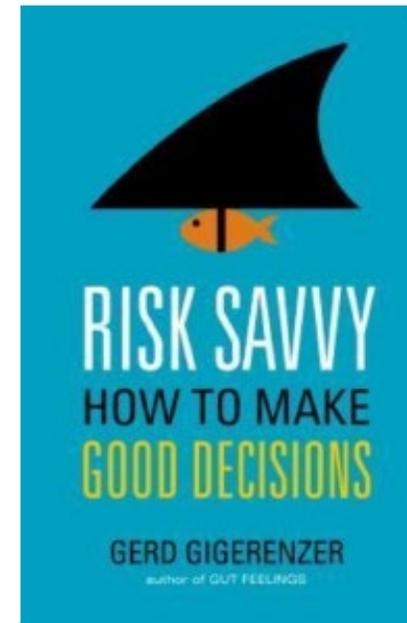
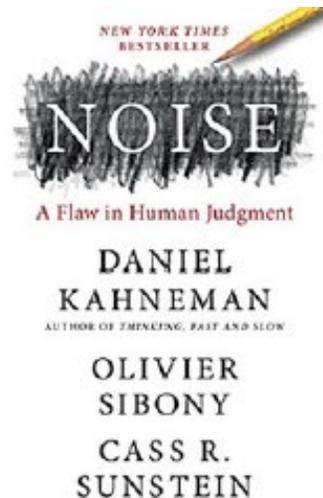
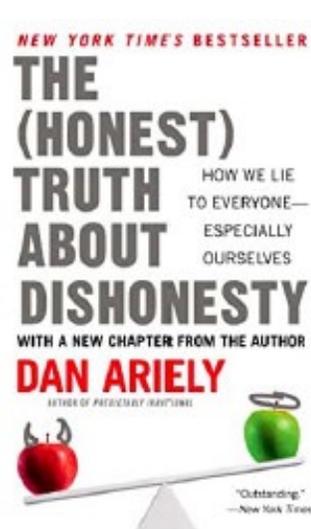
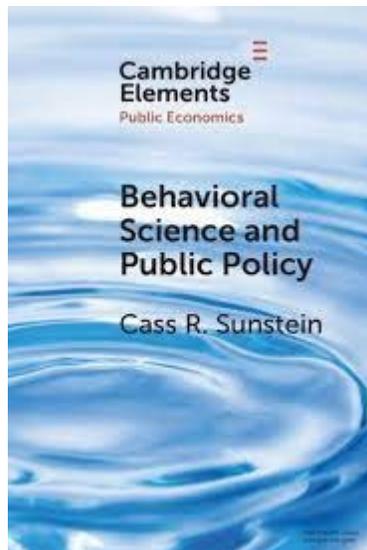
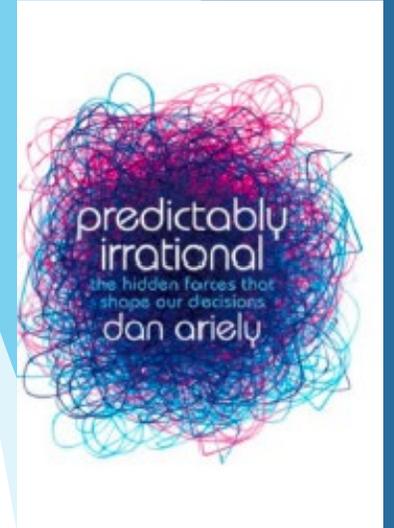
We are **predictably irrational** (Ariely)

We cheat (others and ourselves) (Ariely)

We are not consistent - **Noise in decisions** (Kahneman, Sibony, Sunstein)

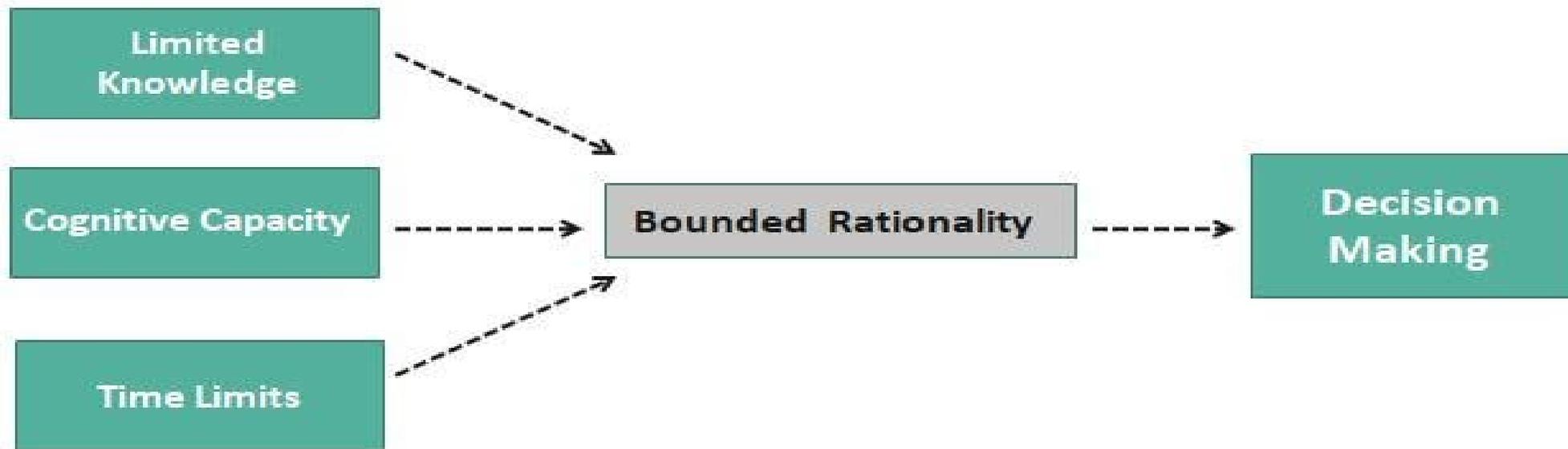
We systematically **overestimate small probabilities** (such as the chances of dying in an accident) and **underestimate moderate and high probabilities** (such as mortality rates for heart disease or cancer) (Gigerenzer)

Most of the time, we are **not homo economicus** - **Bounded rationality** (Simon)



Humans have **bounded rationality** and **bounded willpower**, which contradicts the traditional model of the Homo Economicus.

How Bounded Rationality Works?



SYSTEM 1 & SYSTEM 2

DANIEL KAHNEMAN'S SYSTEMS OF THINKING

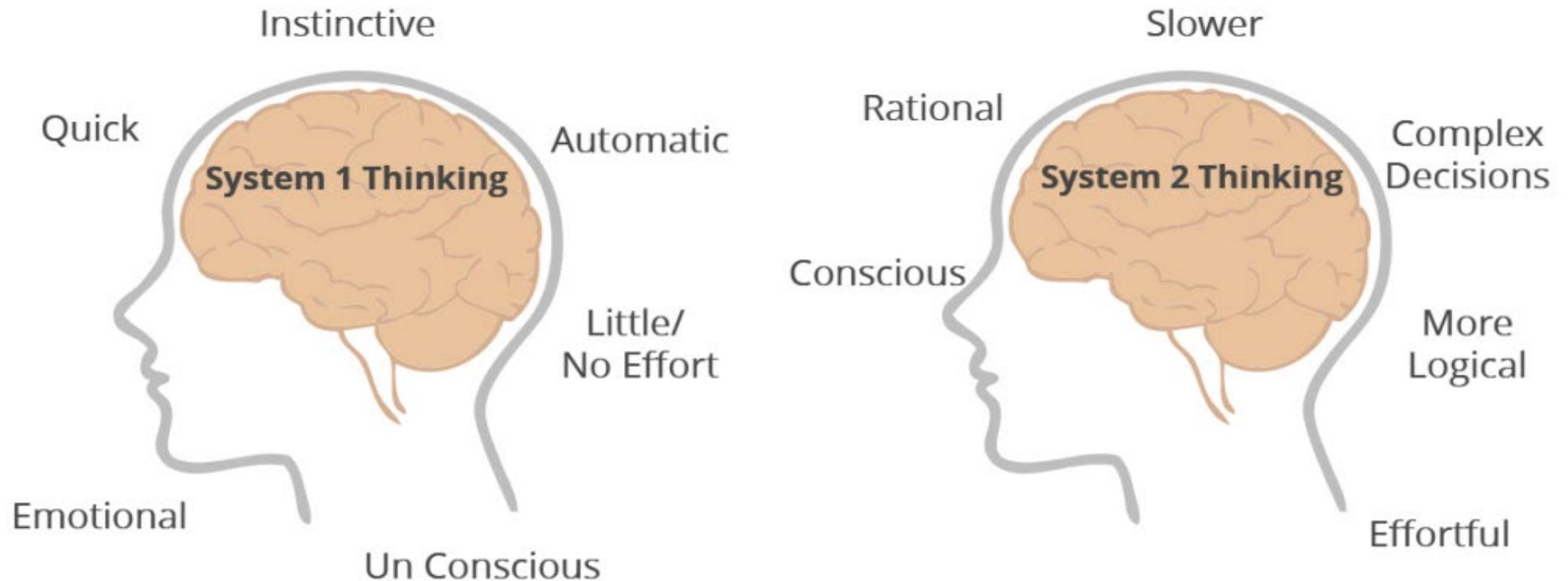


Table 1. Characteristics of system 1 and system 2

System 1	System 2
Does not require working memory	Requires working memory
Autonomous	Cognitive decoupling; mental simulation
Fast	Slow
High capacity	Capacity limited
Parallel	Serial
Nonconscious	Conscious
Biased responses	Normative responses
Contextualised	Abstract
Automatic	Controlled
Associative	Rule-based
Experience-based decision making	Consequential decision making
Independent of cognitive ability	Correlated with cognitive ability

SYSTEM 1

CHARACTERISTICS

- FAST
- INTUITIVE
- ERROR PRONE
- NO THINKING REQUIRED
- EMOTIONS

EXAMPLES

- ADDING 10+10
- IDENTIFYING YOUR BROTHER BY HIS LOOKS
- HOLDING A CASUAL CONVERSATION WITH YOUR BEST FRIEND

SYSTEM 2

CHARACTERISTICS

- SLOW
- THOUGHTFUL
- LOGICAL
- THOUGHT BASED
- CRITICAL THINKING

EXAMPLES

- MULTIPLYING 23*37
- DECIDING TO INVEST YOUR MONEY
- TRYING TO INVENT A NEW PRODUCT

<https://cxl.com/blog/nudge-marketing/>

<https://www.semanticscholar.org/paper/EMPIRICAL-EVIDENCE-FOR-KAHNEMAN-%27-S-SYSTEM-1-AND-2-Kannengisser-Gero/60b5844db8e218825123e7568d27cbc4310e8cf8>

SYSTEM 1 & SYSTEM 2



View the video (0:00-2:25)

<https://www.youtube.com/watch?v=TpvffIWSvb4>

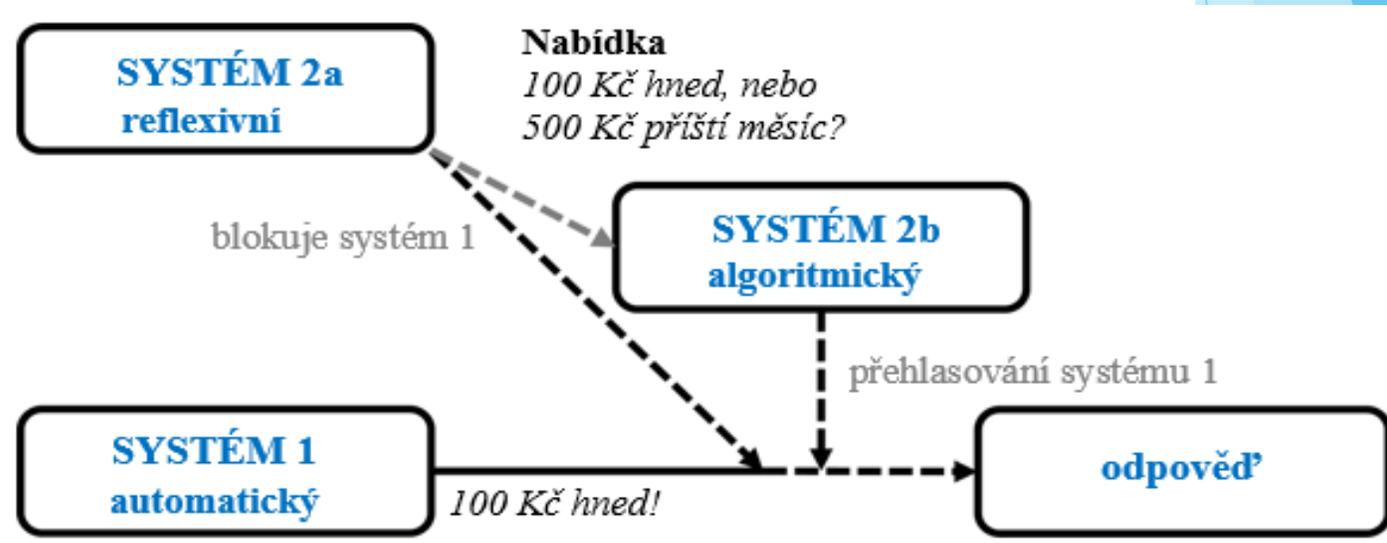


INTERTEMPORAL DECISIONS

100\$ now or 200\$ next month?

System 2a (reflexive part) blocks System 1

System 2b (algorithmic part) outvotes System 1



PUBLIC GOODS AND (BOUNDED) RATIONALITY

*Quod bonum, felix,
faustum,
fortunatumque sit
(Cicero)*

*(May it be good,
fortunate and
prosperous!)*

*At' všechno dobré,
příznivé a šťastné je
požehnáno!)*



Public goods are commodities or services that benefit all members of society, and which are often provided for free through public taxation.

Public goods are the opposite of private goods, which are inherently scarce and are paid for separately by individuals.

Societies will disagree about which goods should be considered public goods; these differences are often reflected in nations' government spending priorities.

PUBLIC & PRIVATE GOODS

		Rivalry in consumption	
		Yes	No
Excludability of benefits	Yes	Private or market goods	Toll or club goods
	No	Common pool resources	Fully public goods

Ostrom and Ostrom (1977)

PURE PUBLIC GOODS

They are characterized by non-rivalry and non-excludability

Non-rivalrous: accessible by all while one's usage of the good does not affect the availability for subsequent use.

Non-excludable: it is impossible to exclude any individuals from consuming the good.



air, national defense, free software

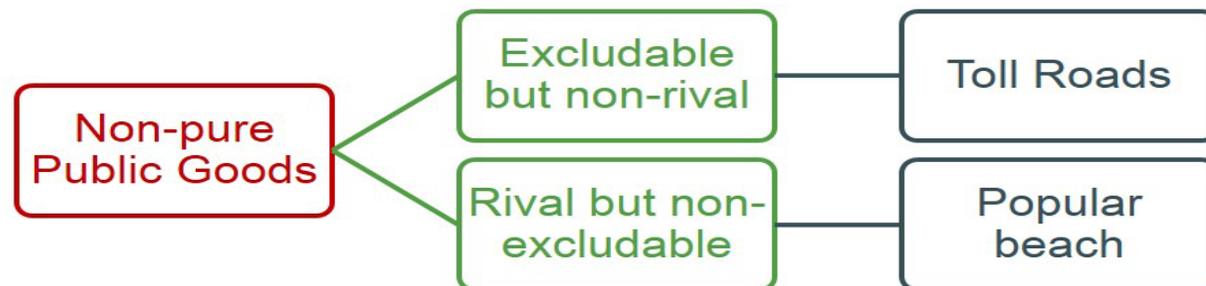
IMPURE PUBLIC GOODS

Impure public goods: the goods that satisfy the two public good conditions (*non-rivalry* and *non-excludability*) only to a certain extent or only some of the time.

oil, timber, coal, public transport

paid public transport - non-rivalrous, excludable

free public transport - rivalrous, non-excludable



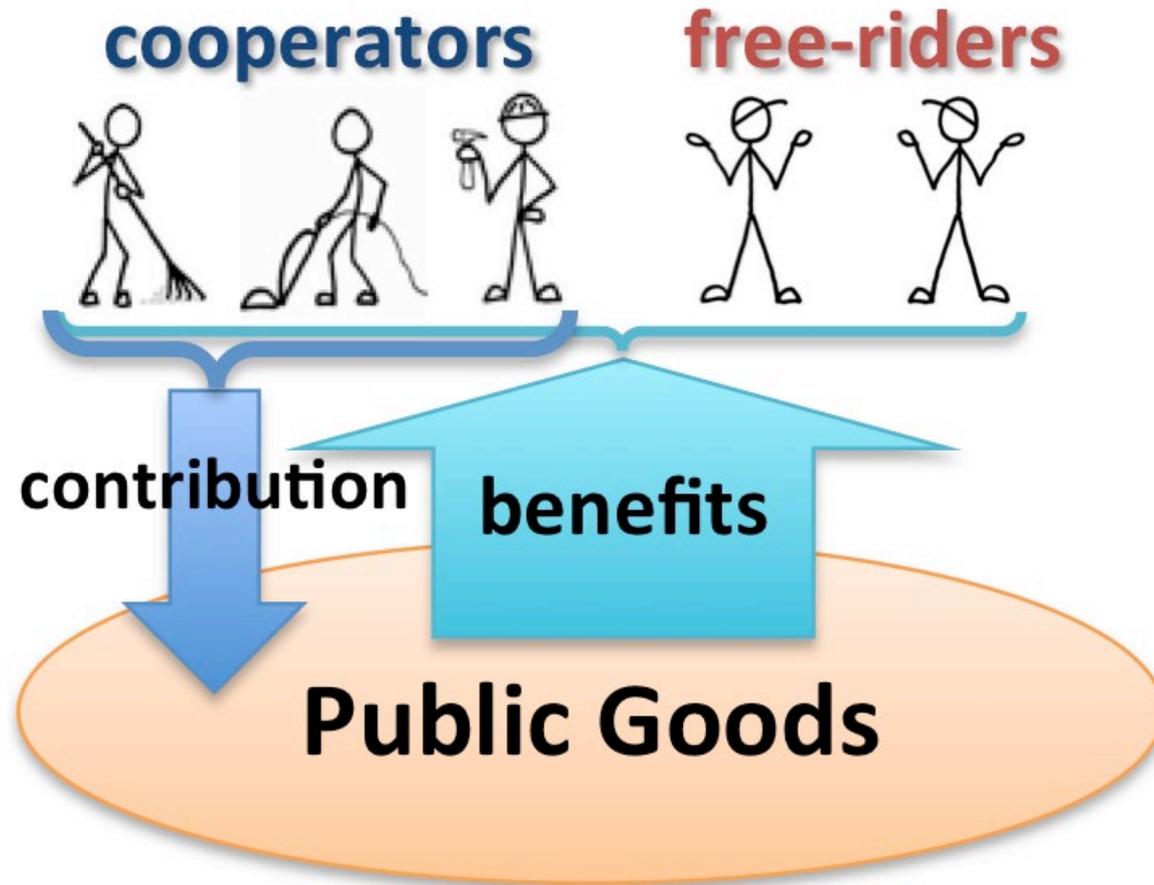
PUBLIC GOODS AND FREE RIDERS

Since public goods are made available to all people, regardless of whether each person individually pays for them, it is possible for some members of society to use the goods **despite refusing to pay.**



<https://medium.com/powershare/elinor-ostrom-on-tragedy-of-the-commons-a47bedcc4c2e>

The Public Goods Game



THE FREE RIDER PROBLEM



View the video

<https://www.youtube.com/watch?v=Uo51GDk8G1Q>

THE FREE RIDER PROBLEM

The free rider problem is **the burden on a shared resource that is created by its use or overuse by people who aren't paying their fair share for it.**

Classical economists point out that if a person knows that he or she will gain an advantage whether he or she does something or not, he or she will often **decide not to do anything.**

<https://www.economicshelp.org/blog/glossary/free-rider-problem/>

THE FREE RIDER PROBLEM

However, in recent decades, economists have become more critical of this model and aware that individuals face many **different motivations**.

For example, an American scientist Elinor Ostrom (1971) researched how individuals could overcome free-rider problems by **working in harmony with aims of the local community**. **Social pressures and feelings of responsibility** can cause people to contribute to public goods - even if, in theory, they could free-ride on others.



Elinor Ostrom
(1933-2012)

PUBLIC GOODS & THE PRISONER'S DILEMMA

Johansson (1991) gives an introduction as to how this can be applied to explain market failures.

The example he gives takes two individuals that can take up production of a **pure public good (i.e., neither of them can be excluded from using it)**, which yields to each a **benefit of 6 pounds** but costs a **total of 8 pounds** to produce.

Both co-operate

Player 1 but not Player 2 co-operates

Player 2 but not Player 1 co-operates

Non-co-operation

Net benefit	
Player 1	Player 2
2	2 (6-4)



PUBLIC GOODS AND THE PRISONER'S DILEMMA

	Net benefit	
	Player 1	Player 2
Both co-operate	2	2
Player 1 but not Player 2 co-operates	-2	6
Player 2 but not Player 1 co-operates	6	-2
Non-co-operation	0	0

If the two individuals co-operate, they both earn **2 pounds**, which is the **Pareto-efficient outcome**.

The rational strategy for each individual is **not to co-operate**. But if each player plays rationally, non-co-operation results in **gain for neither party**.

Seminar Paper and its Presentations

Specification of the public and social policy issue

(description of the selected problem, its topicality and the tree of causal relations)

10 min presentation: 10 November 2023



Thank you for your attention

Ing. Radek Kovács

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