

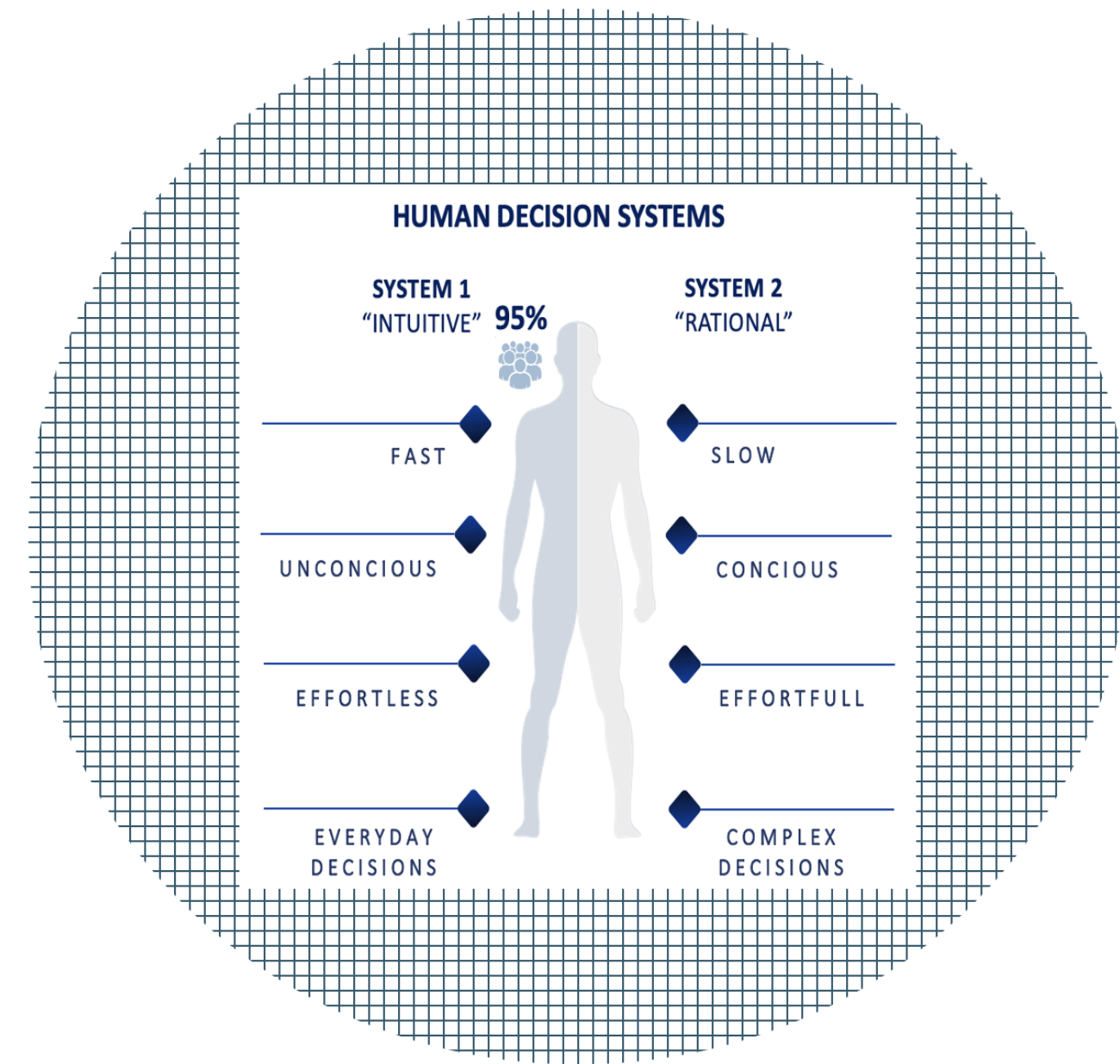
Leadership Environment: Behavior Influence amid Forecasting & StratCom

Nudge

Choice Architecture



Let's talk about it



“Let’s Meet”



e.SQUARE INSTITUTE
BEHAVIORAL ANALYSIS-
INTERACTION



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 - +30 693 6639 913
 - L.K.Rizopoulos@gmail.com



<https://demo.openeclass.org/courses/DEMO-A2605/>

Understanding Behavioral Economics Today

*Insights into Human Decision-
Making*



Main Challenges

- Internal cohesion
- Changing environment
- Demographic evolution
- Climate change a multiplying factor



MIGRATION

EU as an Island of PEACE?

Main Challenges 2019



FORECAST 2030

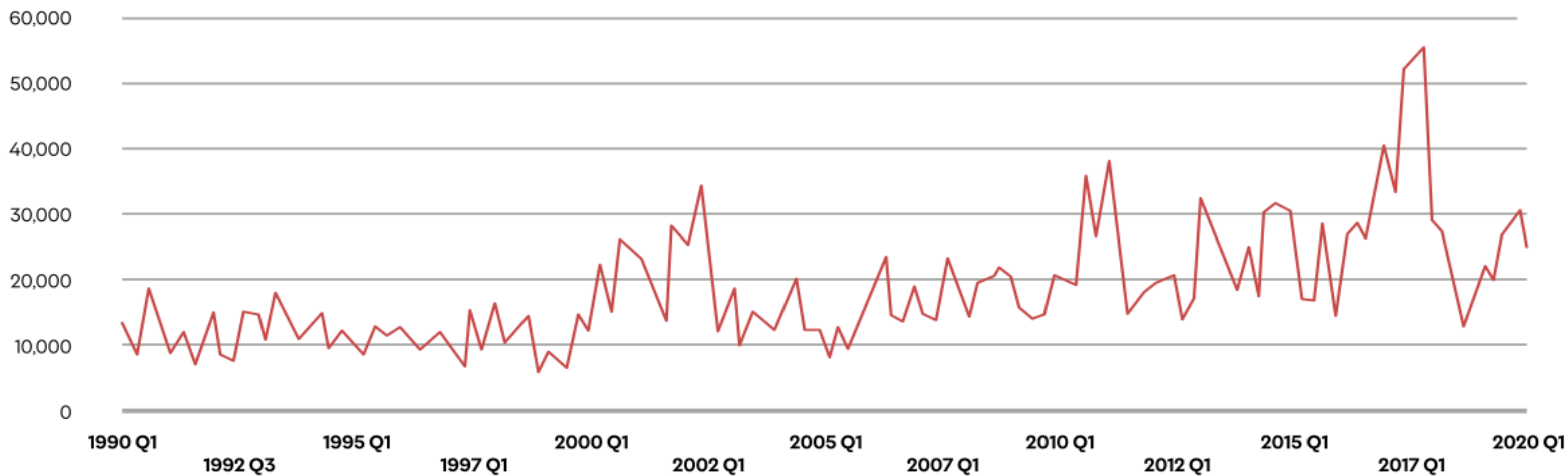
From Stability to Uncertainty

Despite regional wars, brinksmanship, and economic ups and downs, the world has been a remarkably stable place since the end of World War II. That's led to a Holocene of sorts for business, one in which there was an unusually stable climate for growth and globalization. Buffered by geopolitical constancy, businesses could plan well into the future and internationalize supply and value chains in search of the highest efficiency and margin.

FORECAST 2030

From Stability to Uncertainty

THE WORLD UNCERTAINTY INDEX



Source: World Uncertainty Index: Global, retrieved 2022

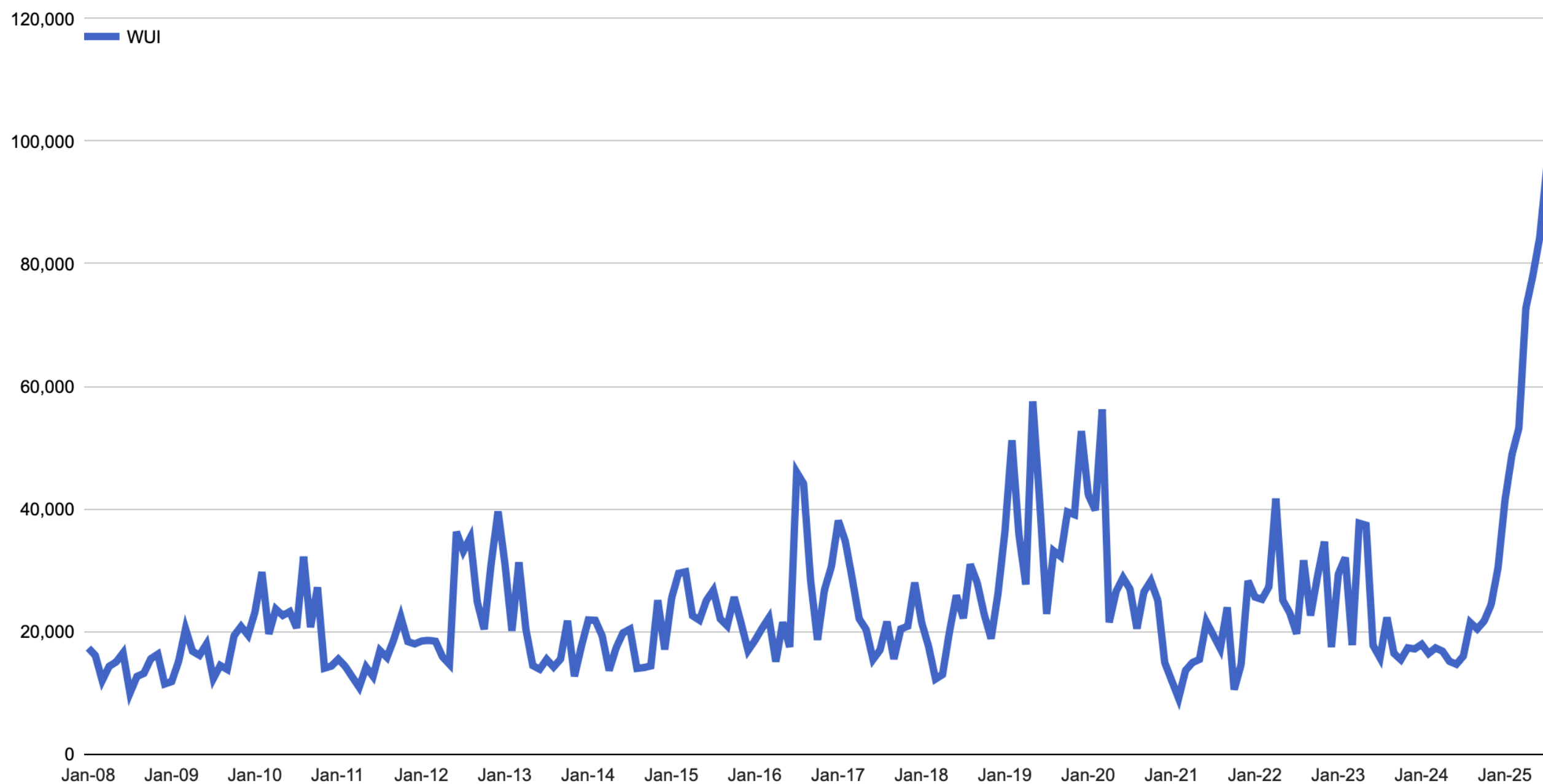
FORECAST 2030

From Stability to Uncertainty

World Uncertainty Index (WUI): Global

Index. GDP weighted average. January 2008 to August 2025

[Print](#) [Excel](#) [Copy](#)



Main Challenges 2025



“Deep Fix”

Don't try to CHANGE the MIND
but
CHANGE the CONTEXT...



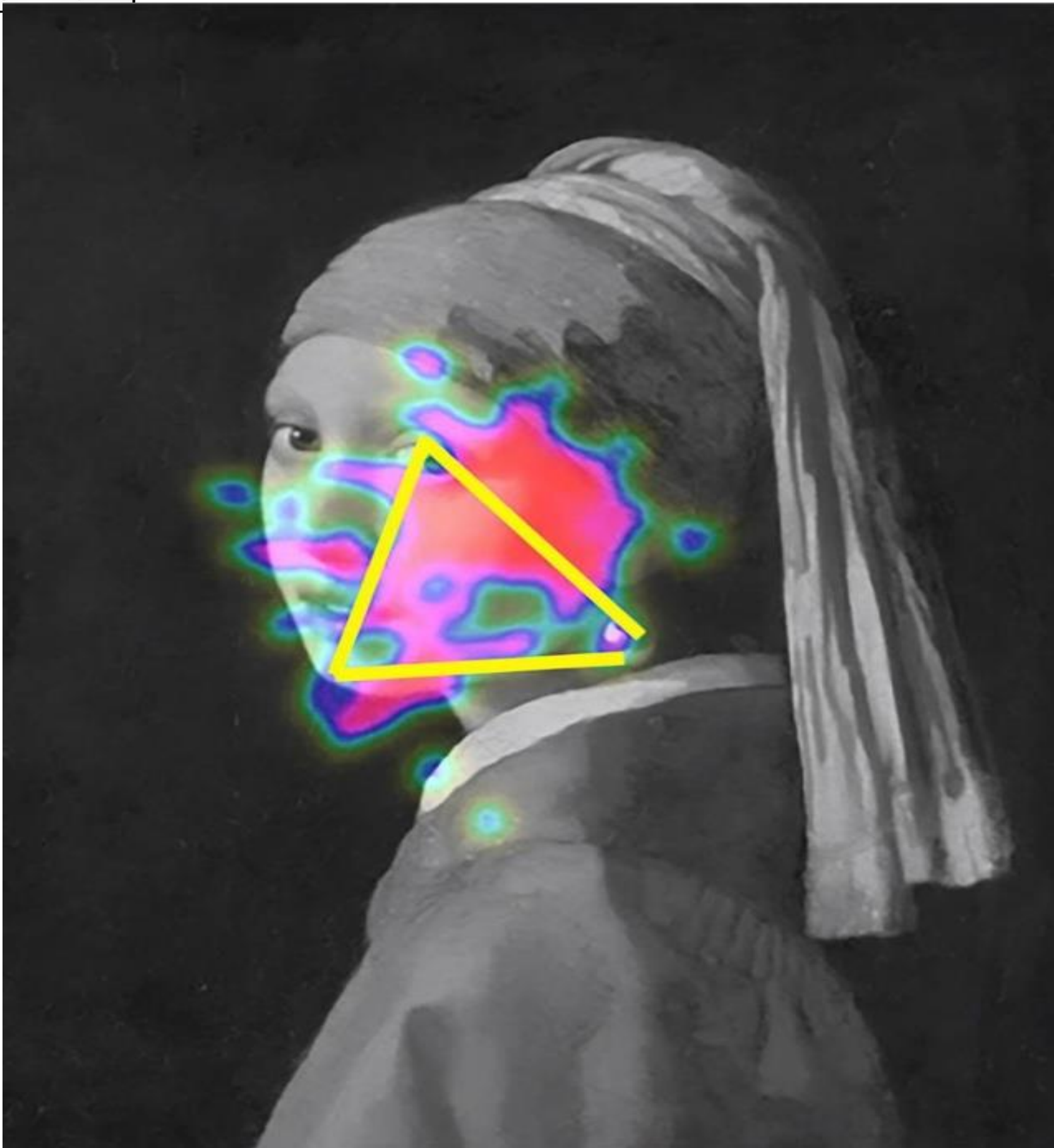
**‘The brain
doesn't lie’**

‘The brain doesn't lie’

"Sustained Attentional Loop»

"You have to pay attention whether you want to or not. You have to love her whether you want to or not,»

"The longer you look at somebody, the more beautiful or more attractive somebody becomes,"



Exploring Behavioral Economics Concepts Today



Decision Making Biases

Our choices are often influenced by biases.



Nudges and Choices

Small prompts can significantly change decisions made.



Loss Aversion Theory

People prefer avoiding losses over acquiring equivalent gains.



Nudges and Choices

Small prompts can significantly
change decisions made.

Nudge theory (Richard Thaler & Cass Sunstein) is a concept that suggests subtle changes in the way choices are presented **can influence people's decisions without restricting their freedom of choice**. These "nudges" are designed to steer individuals toward better decisions.

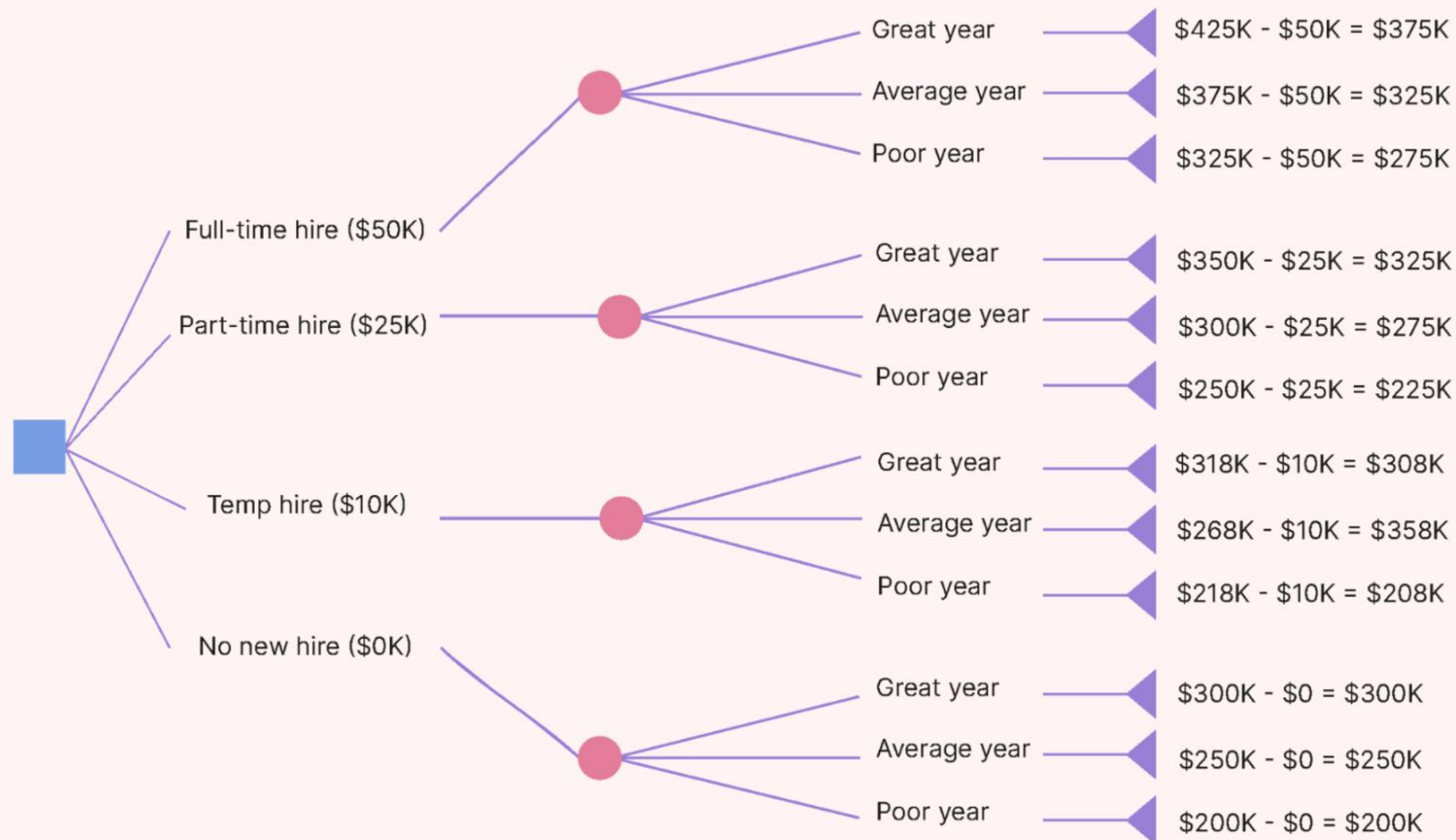
“Nudges”

"A nudge, 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..."



Leadership
is not about size,
it's about
Knowledge & Wisdom

“Decision Tree”





Nudges and Choices

Small prompts can significantly
change decisions made.

Key principles of nudge theory:

- 1.Libertarian Paternalism:** Guide people toward beneficial choices while preserving autonomy.
- 2.Choice Architecture:** The way choices are framed or presented impact decision-making.
- 3.Defaults:** People tend to stick with pre-selected options.
- 4.Social Norms:** What others are doing can encourage similar behavior ("9 out of 10 people....")
- 5.Simplification:** Making complex decisions easier to understand.



Nudges and Choices

Small prompts can significantly
change decisions made.

Examples of nudges:

Placing healthier food at eye level in cafeterias.

Sending reminders for upcoming deadlines (e.g., tax payments).

Using descriptive labels like "80% fat-free" instead of "20% fat."

“Most Influential Values”

Rank	Value
1	Family
2	Relationships
3	Financial Security
4	Belonging
5	Community
6	Personal Growth
7	Loyalty
8	Religion/Spirituality
9	Employment Security
10	Personal Responsibility

Just a small Test

“Our constitution does not copy the laws of neighboring states; we are rather a pattern to others than imitators ourselves.

Its administration favors the many instead of the few; this is why it is called a democracy.

If we look to the laws, they afford equal justice to all in their private differences; if no social standing, advancement in public life falls to reputation for capacity, class considerations not being allowed to interfere with merit; nor again does poverty bar the way, if a man is able to serve the Union, he is not hindered by the obscurity of his condition...”

Just a small Test

Where this text come from?

- + 1000 years, source document : Magna Charta
- + 250 years, source document: US Constitution
- + 2500 years, source Athenian history
- + 20 years, source document: preamble of EU draft Constitution

Just a small Test

Thucydides in Pericles' Funeral Oration (book 2 v37)

Main Challenges

- Political Violence
- Internal cohesion
- Changing environment
- Economic Uncertainty
- Demographic evolution
- Climate change as multiplying factor
- AI Panic?

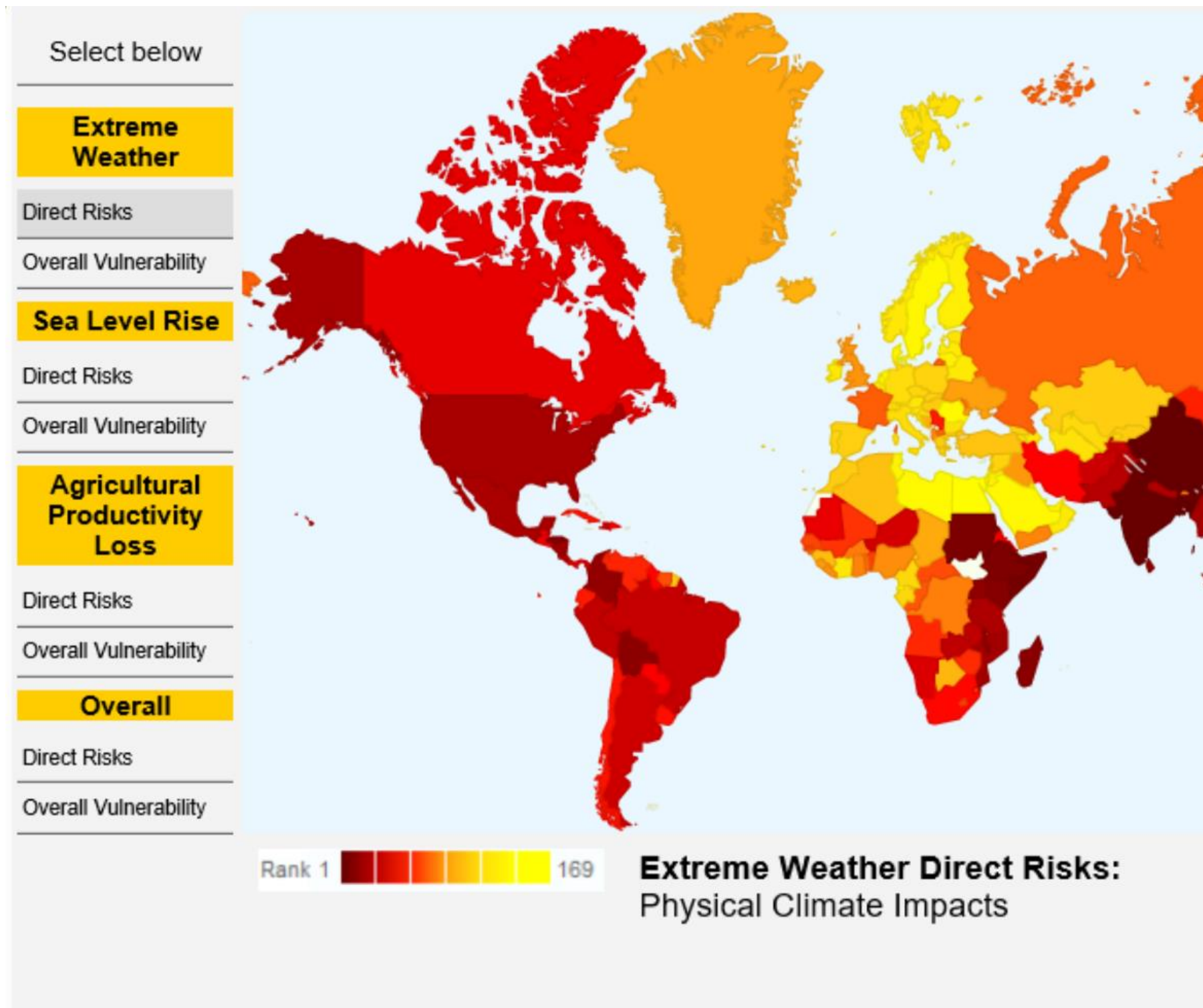


MIGRATION

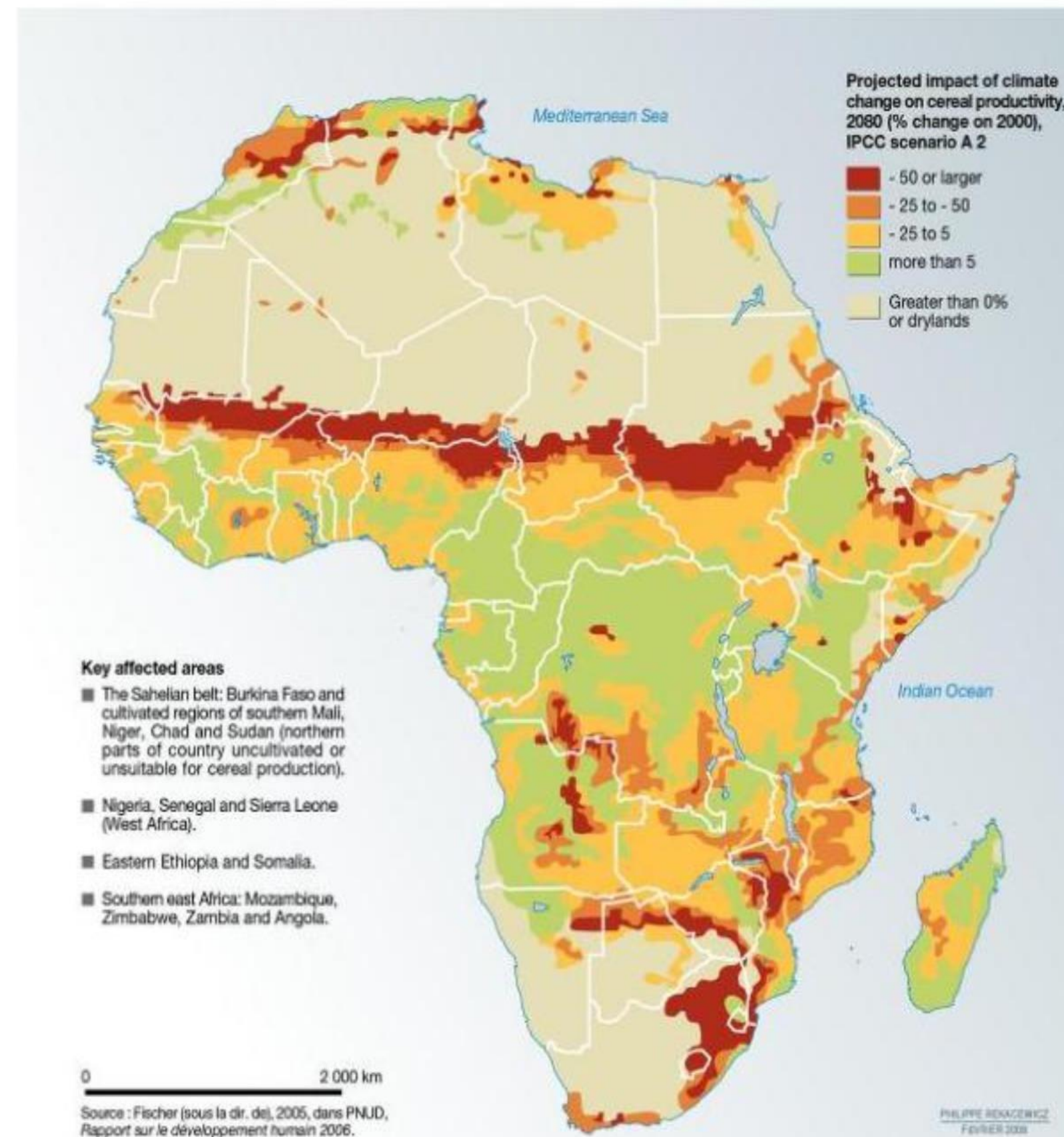
EU as an Island of PEACE?

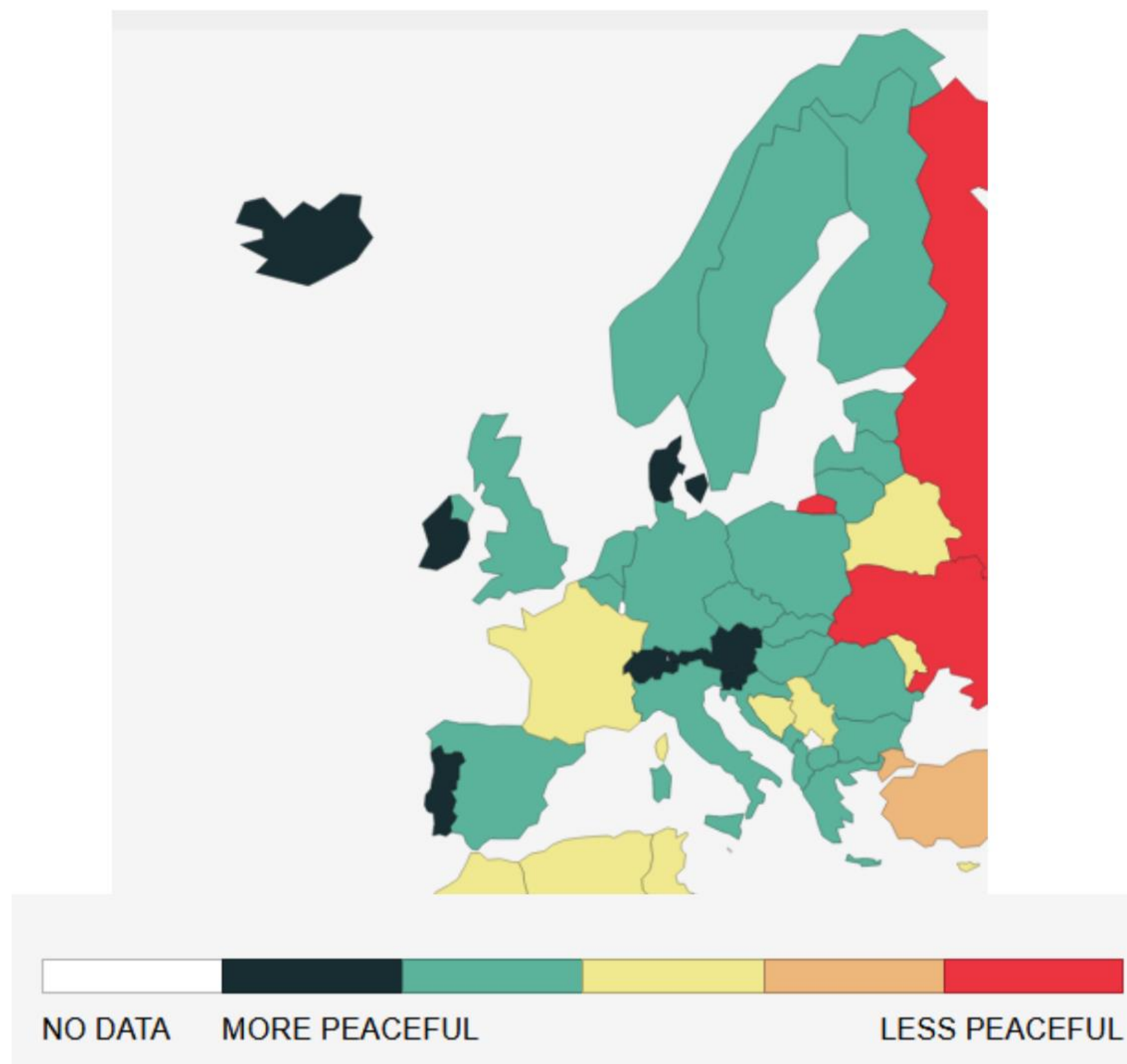
ECONOMIC DATA

Country/Entity	GDP x10 ¹² \$ 2024 (Source: World bank <i>data.worldbank.org</i>)	External trade x10 ⁹ \$ 2022 (Source: WTO)	Inflation April 2025	National bank interest rate
United States	27.4	6,786	2,30%	4,33%
EU (@27)	19.3	8,171	2,20%	2,65%
China	17.8	7,138	-0,10%	3,00%
Germany	4.5	3,978		
India	3.5	1,612		
France	3.0	1,996		
Italy	2.3	1,559		
Russia	2.0	903	10,20%	21,20%
Spain	1.6	1,103		
Belgium + Luxembourg	0.6	1,522		



Cereal productivity in Sub-Saharan Africa under a scenario of the IPCC that shows CO₂ atmospheric concentrations a level at 520-640 ppm by 2050



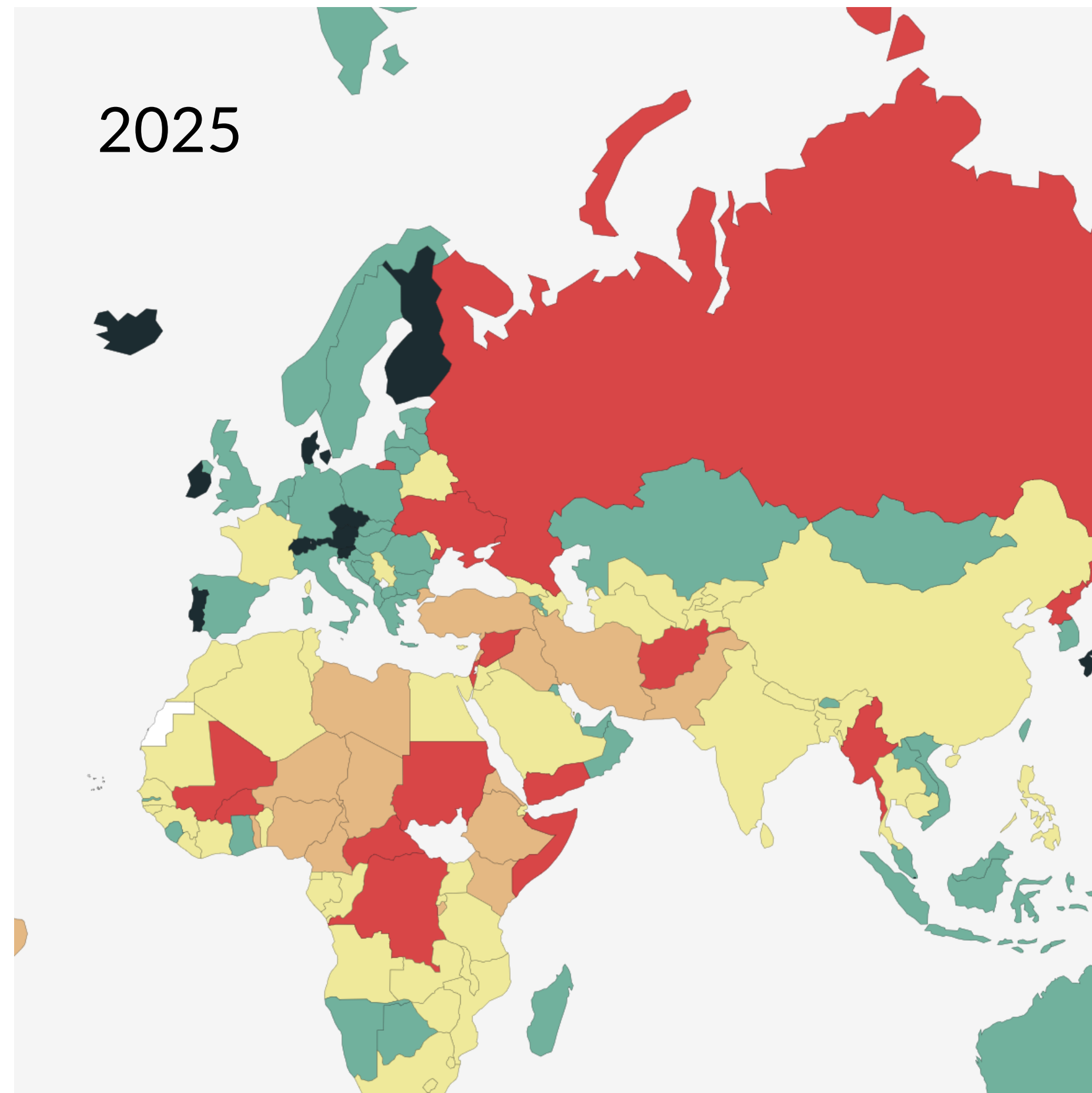
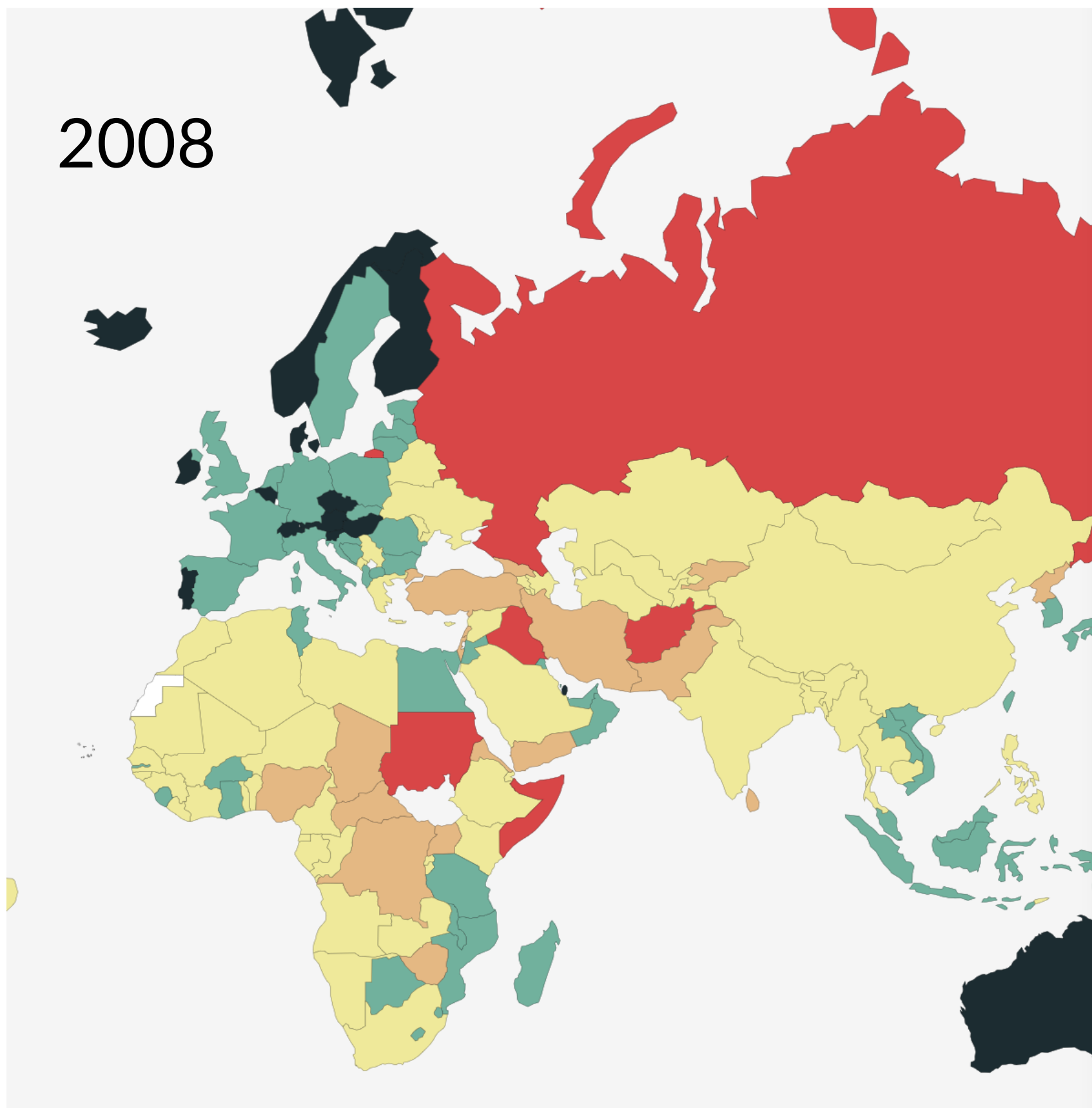


The Global State of World Peace 2024

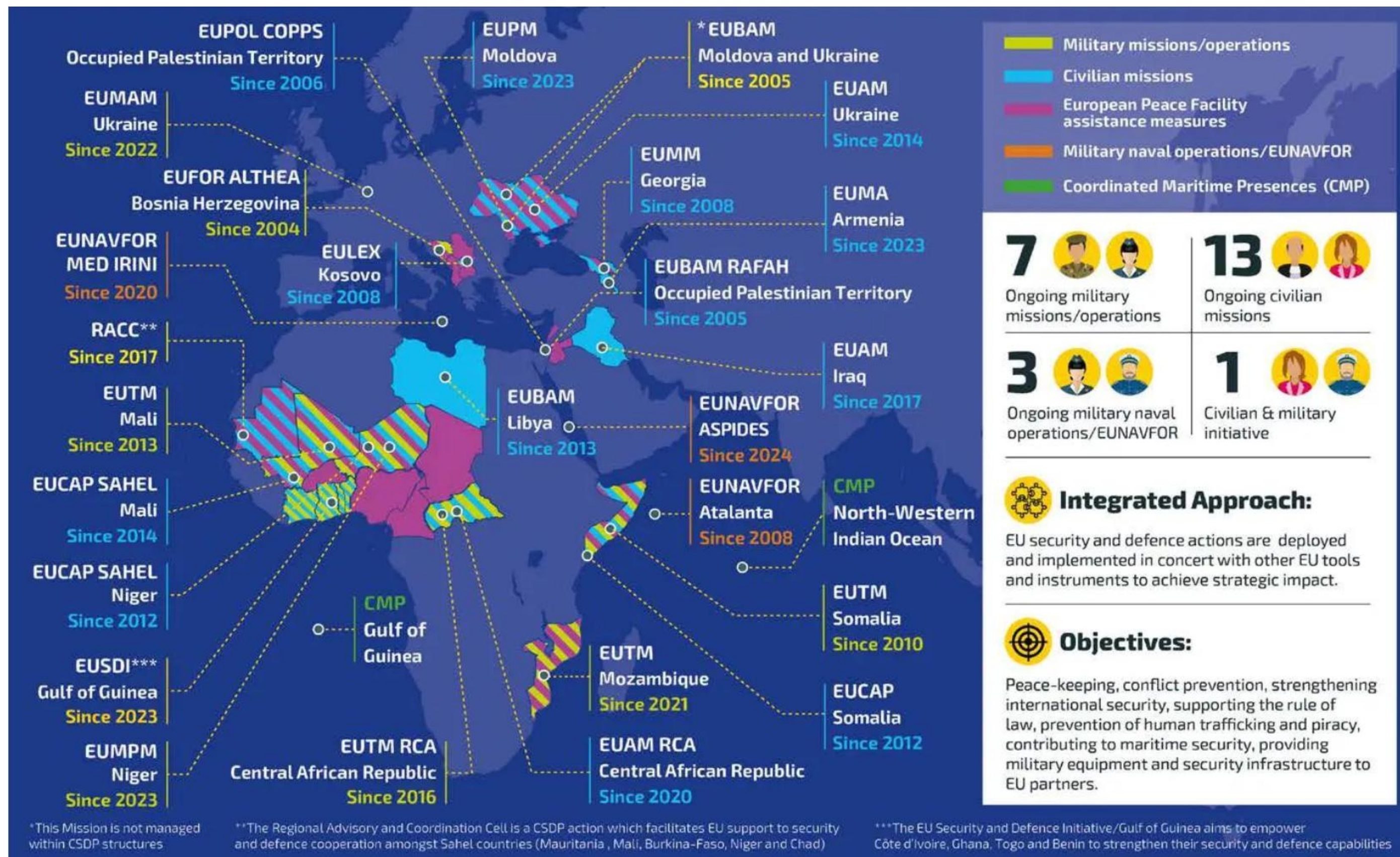


2008

2025



EU Engagement as Today



It is the Hat?





“10 out of 100 die.”



“90 out of 100 are cured.”



Israel Defense Forces 57m



HUMANITARIAN AID UPDATE:

December 8



humanitarian aid trucks entered the Gaza Strip.

Approx. 685

trucks worth of aid are waiting for collection.



trucks were collected from the Gazan side of Kerem Shalom by international organizations.



A convoy of 63 trucks entered Gaza directly through Gate 96.



Israel Defense Forces 4h



MAY THEIR MEMORIES BE A BLESSING
FALLEN SOLDIERS ON DECEMBER 9, 2024



Master Sergeant (Res.)
Binyamin Destaw
Negose z"l



Major (Res.)
Evgeny Zinershain z"l



Sergeant First Class
(Res.) Erez Ben Efraim z"l



Captain (Res.) Sagi
Ya'akov Rubinshtein z"l



Israel Defense Forces 55m



HUMANITARIAN AID UPDATE:

December 8



tankers of fuel and 6 tankers of cooking gas designated for the operation of essential infrastructure were transferred into Gaza.



tankers of fuel were coordinated to northern Gaza for the refueling of water pumping facilities and bakeries.



“Deepfakes”

- Frightening.
- Social media will be the most fertile ground.
- Attempts to influence elections and many more (?)

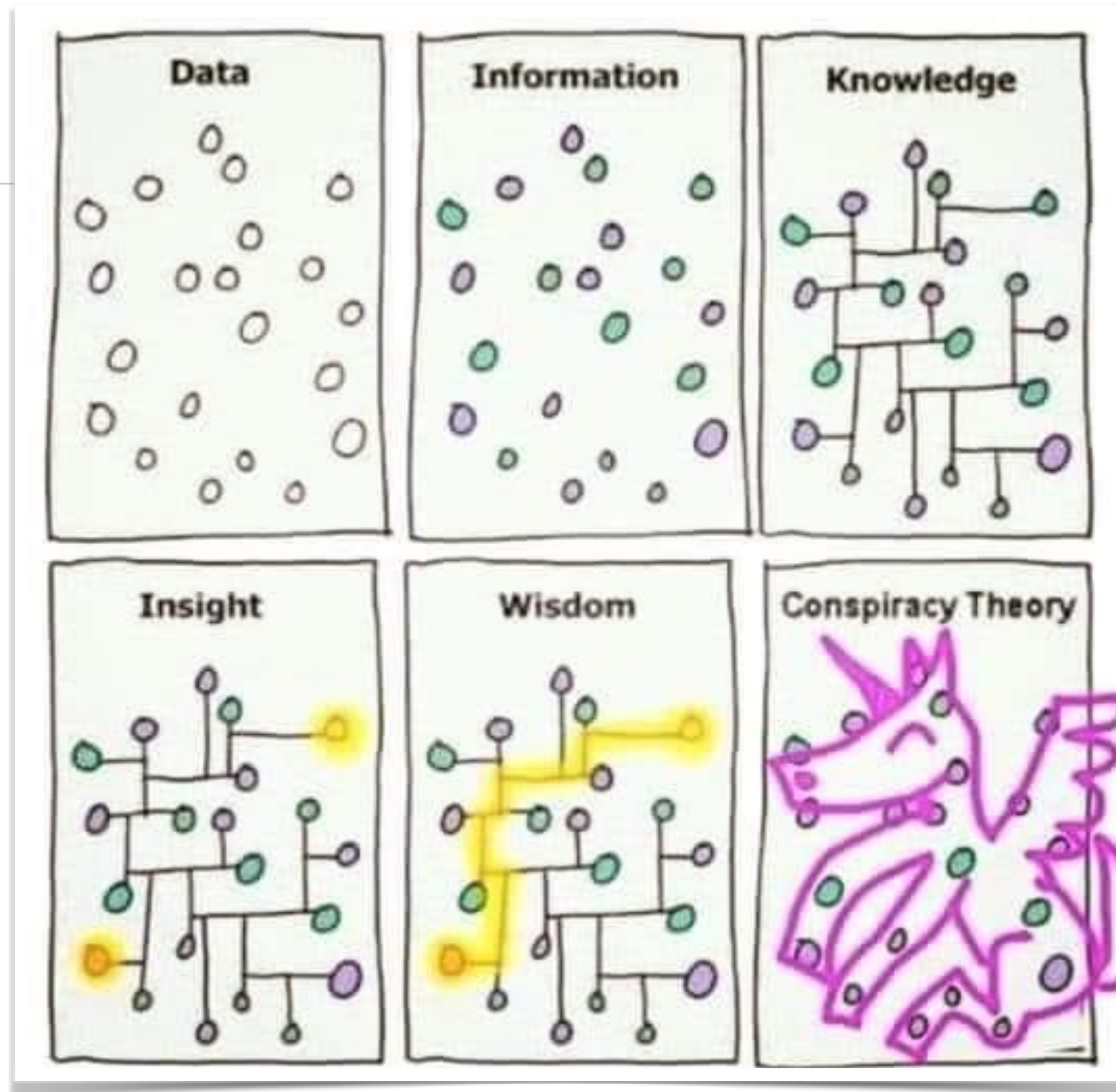
“Deepfakes”

- Deepfakes also erode democracy in less direct ways.
- **“Liar’s Dividend”** : public figures caught in recordings of misbehavior will find it easier to cast doubt on the evidence against them.
- Broadly, it becomes less inclined to [trust news in general](#).



“Deep Fix”

- **No silver bullet** for countering deepfakes. Just legal and technological approaches - **Mitigation**
- But none will overcome the problem.
- Need to learn resilience. In short, **Learn to live with Lies**



“Deep Fix”

Don't try to CHANGE the MIND
but
CHANGE the CONTEXT...

WHY?

Preparing to Lose our Jobs

Why We Must Retire These Questions

What Do You Want To
Be When You Grow Up?

65%

Job That Do Not Exist Yet

What Is Your Major?

47%

Automated by 2033

27%

Work In Their Major

What Do You Do?

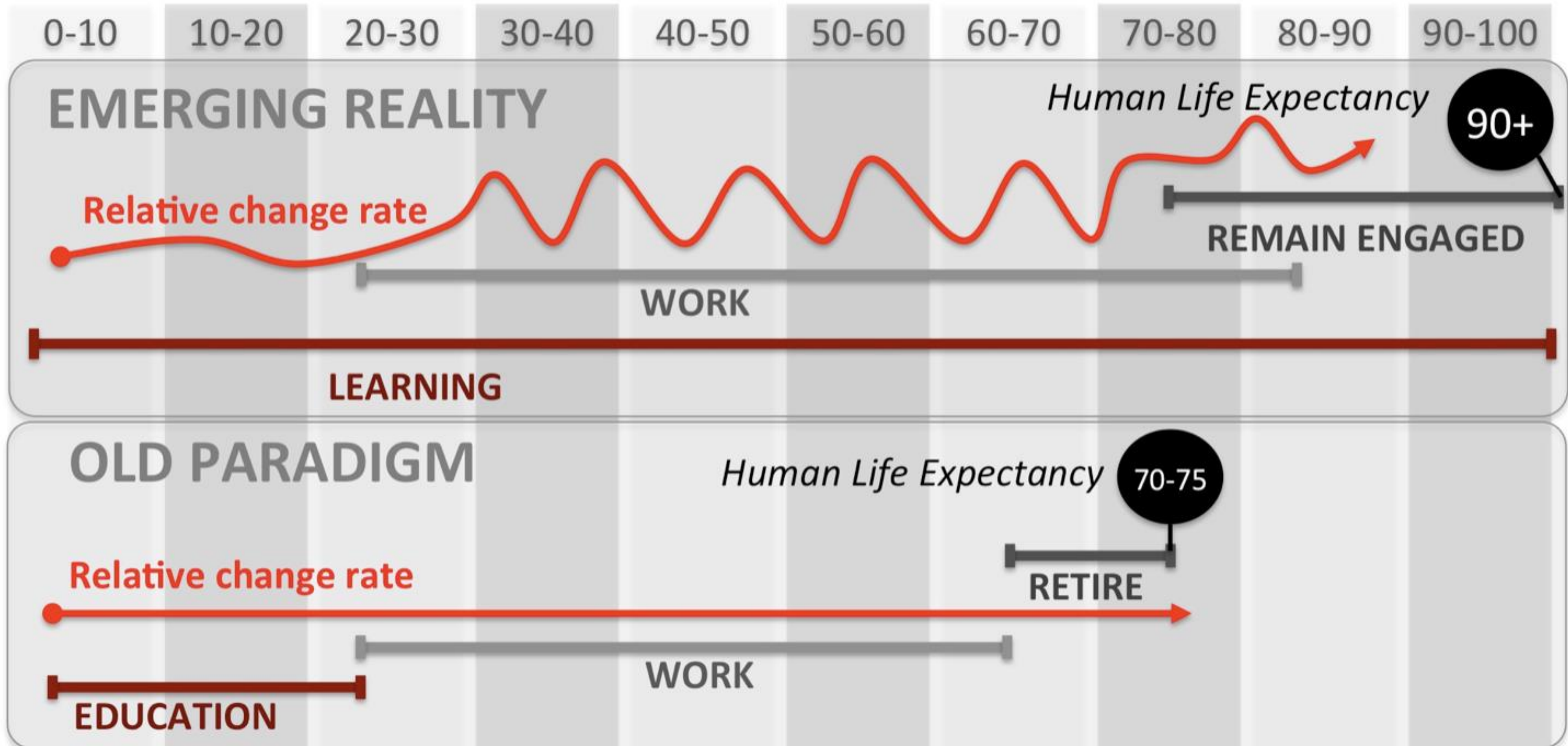
17

Jobs

5

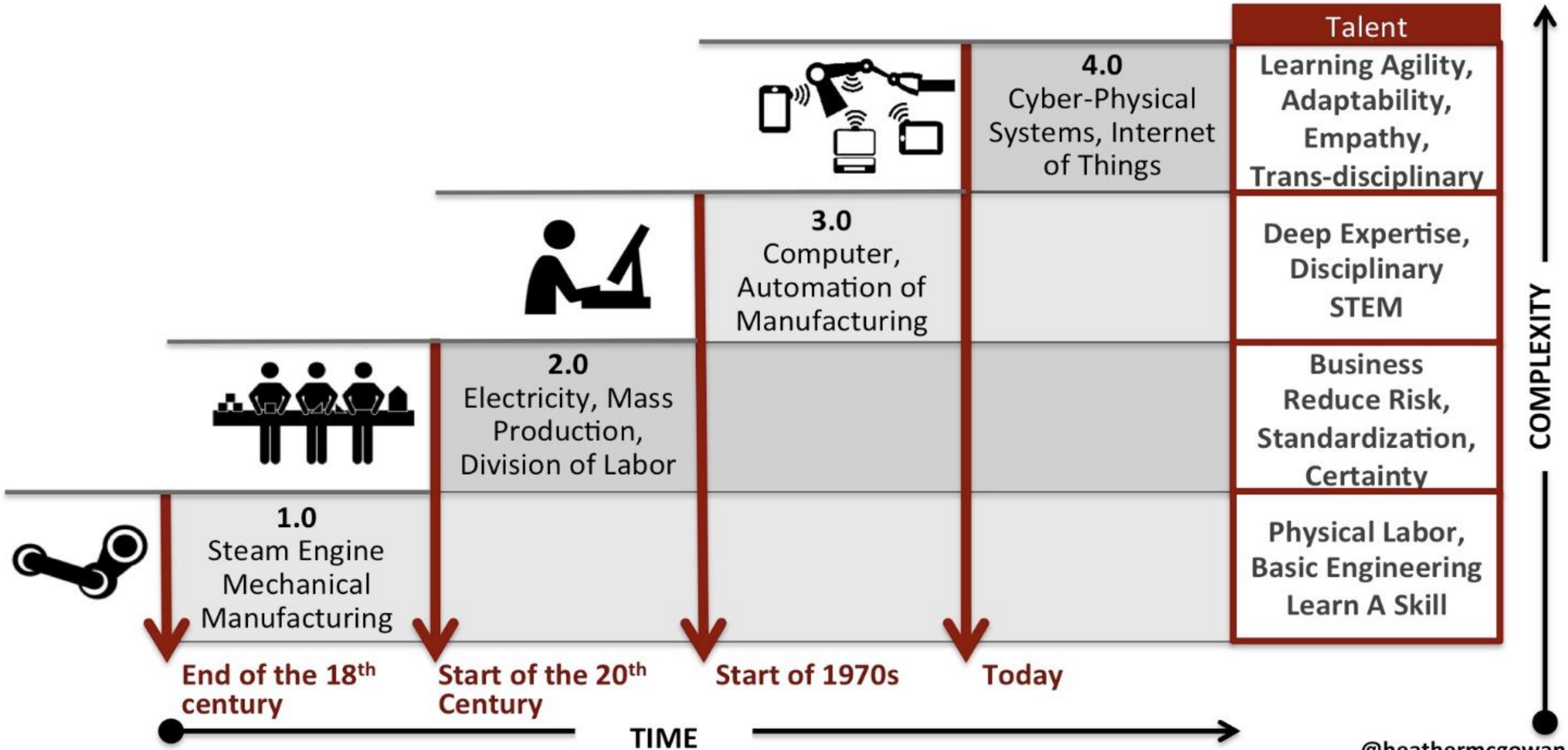
Industries

Career Arc: Longevity + Change Rates = Lifelong Learning





@heathermcgowan

Context: Next Industrial Revolution (World Economic Forum 4th)



Work Transforming: More Value, Fewer Human Workers

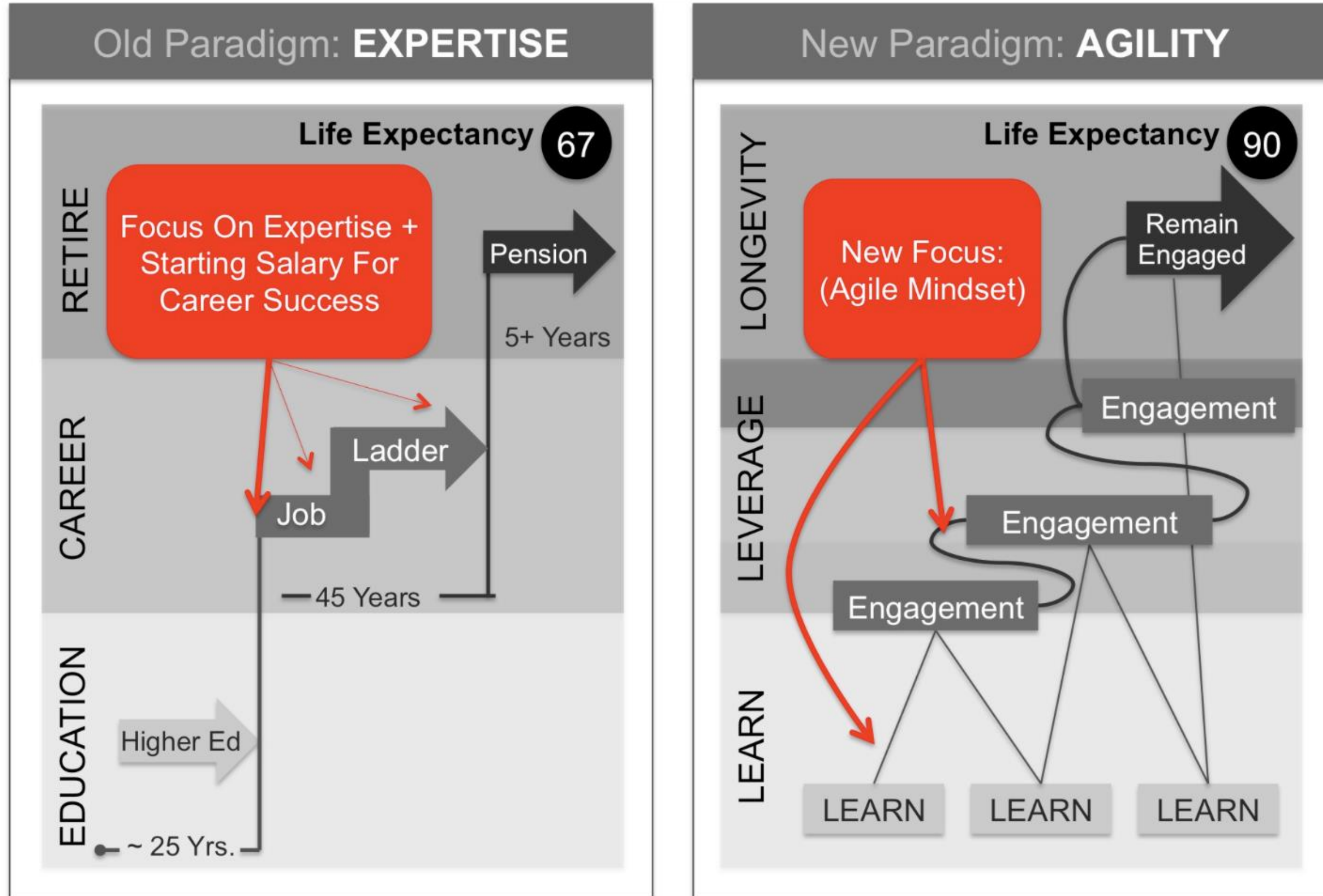
	1990 DETROIT	2014 SILICON VALLEY
REVENUE	\$250 Billion	\$247 Billion
EMPLOYEES	1.2 Million	127,000 (-10x)
MARKET CAP	\$26 Billion	\$1.09 Trillion (40x)

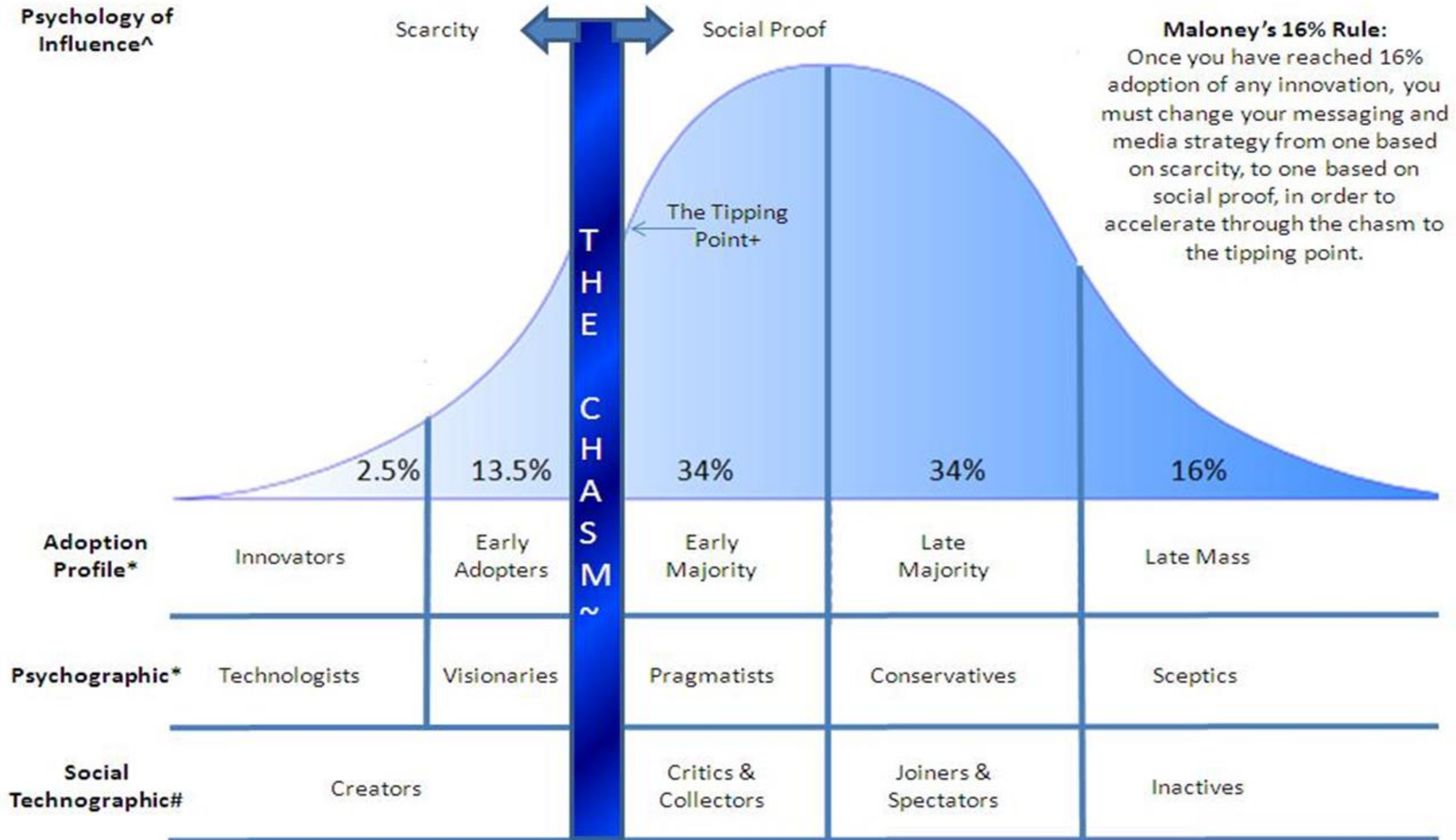
Data Source: Klaus Schwab, Fourth Industrial Revolution, World Economic Forum

Adding 1 Robot per 1,000 workers led to unemployment for 6 workers
and decreased wages by .50 percent (MIT – BU study 1990-2007)

From Expertise to Agility



Accelerating Diffusion of Innovation: Maloney's 16% Rule®

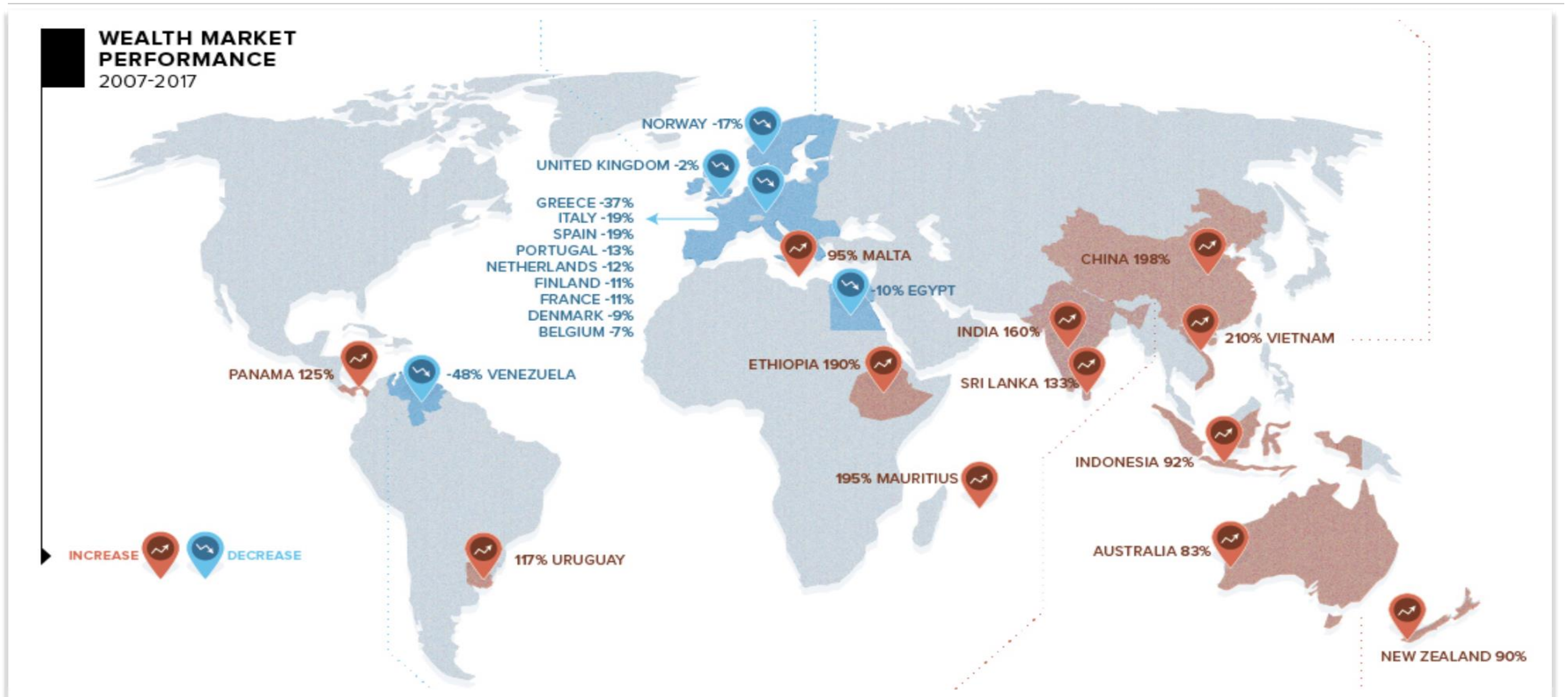


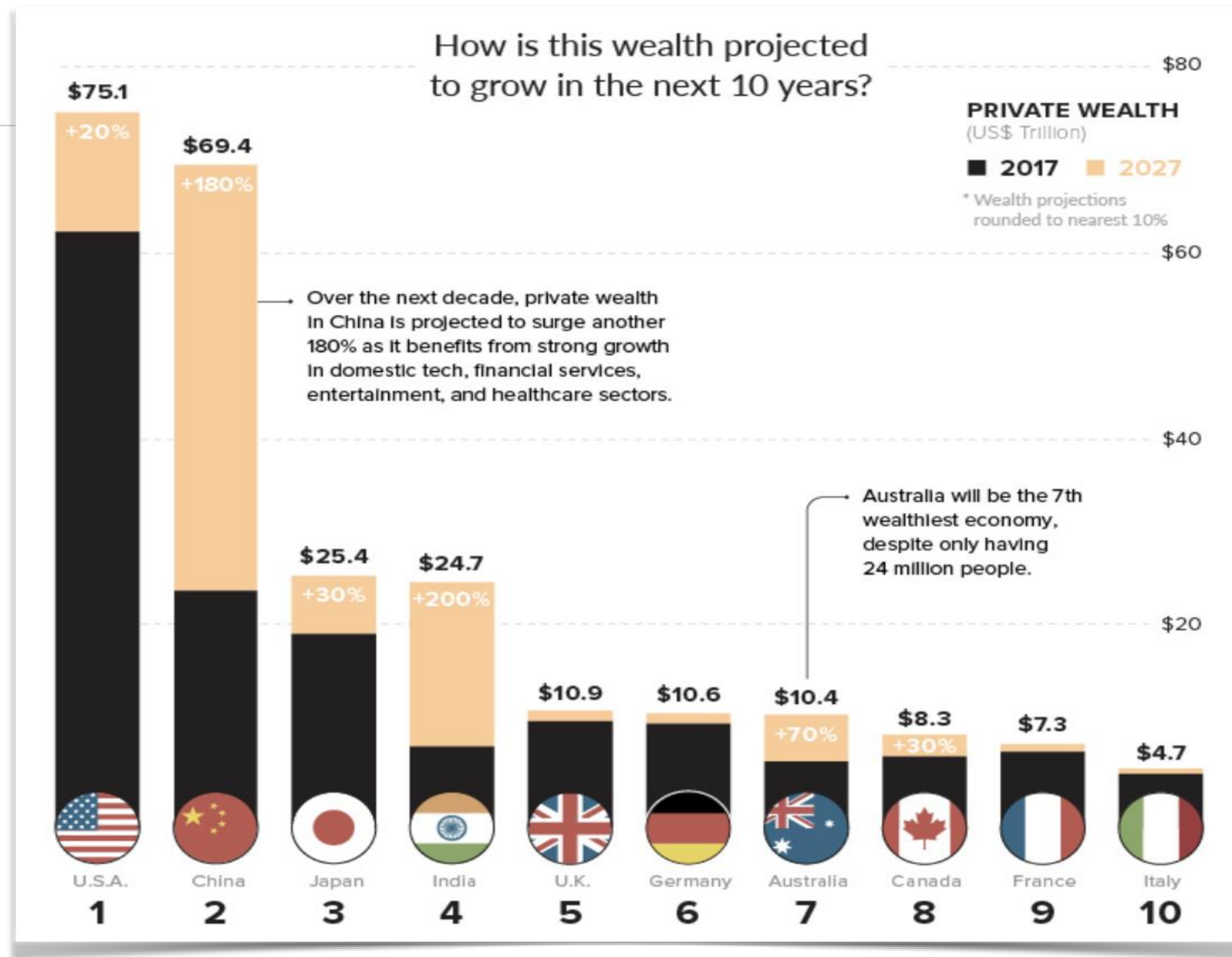
[^] Robert Cialdini ^{*} Everett Rogers [#] Forresters [~] Geoffrey Moore + Malcolm Gladwell

Behavioral Insights

To improve **outcomes**, we need a better understanding of **behavior**

World as Today





FORECAST 2030

1 Extreme Volatility Accelerates

PG. 6

2 The Great Talent Shortage

PG. 16

3 Healthcare Embraces Prevention

PG. 24

4 The Two Frontiers of Economic Growth

PG. 34

5 Industries Move from an Owned to a Shared Model



6 ESG Becomes Mandatory

PG. 52

7 It's an AI World After All

PG. 62

8 An Aging Population Turns Silver into Gold

PG. 74

9 The Era of Renewable Energy Arrives

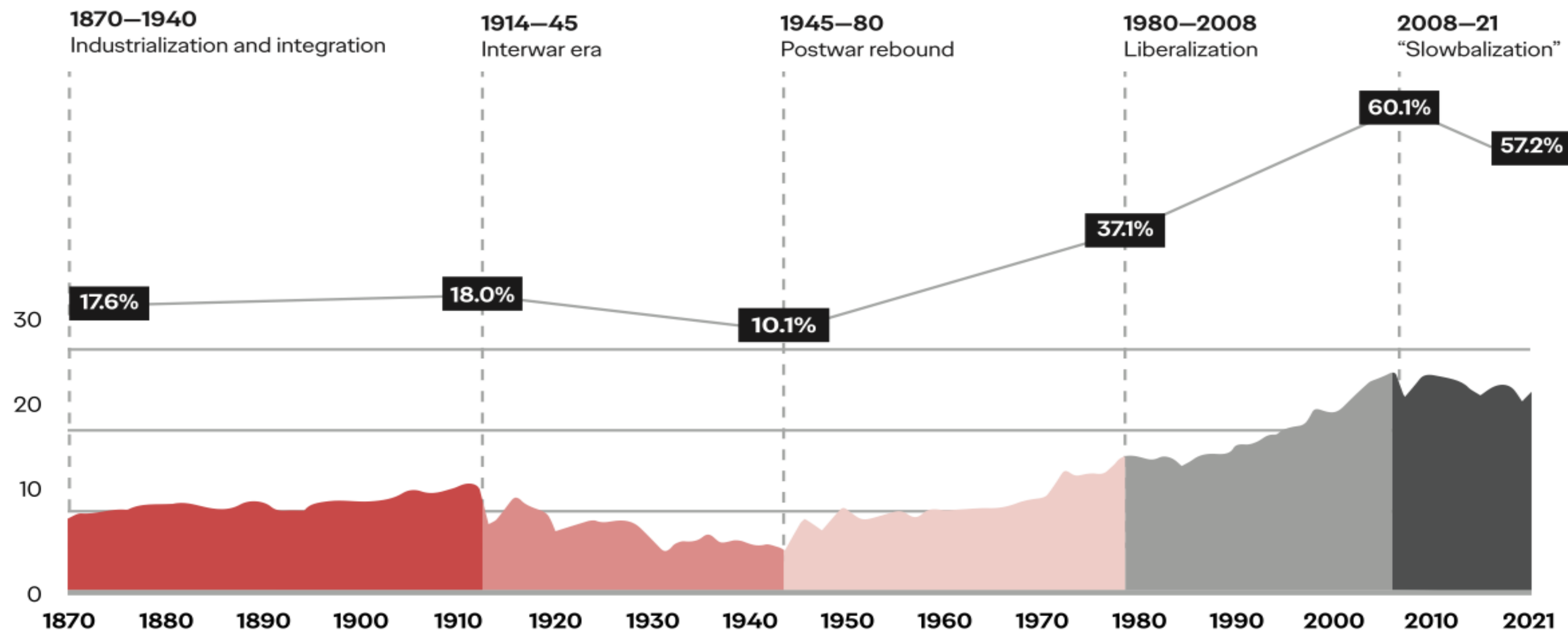
PG. 82

10 Women Take Control of Global Wealth

FORECAST 2030

GLOBALIZATION STUMBLES

Trade Openness Index, 1807–2021

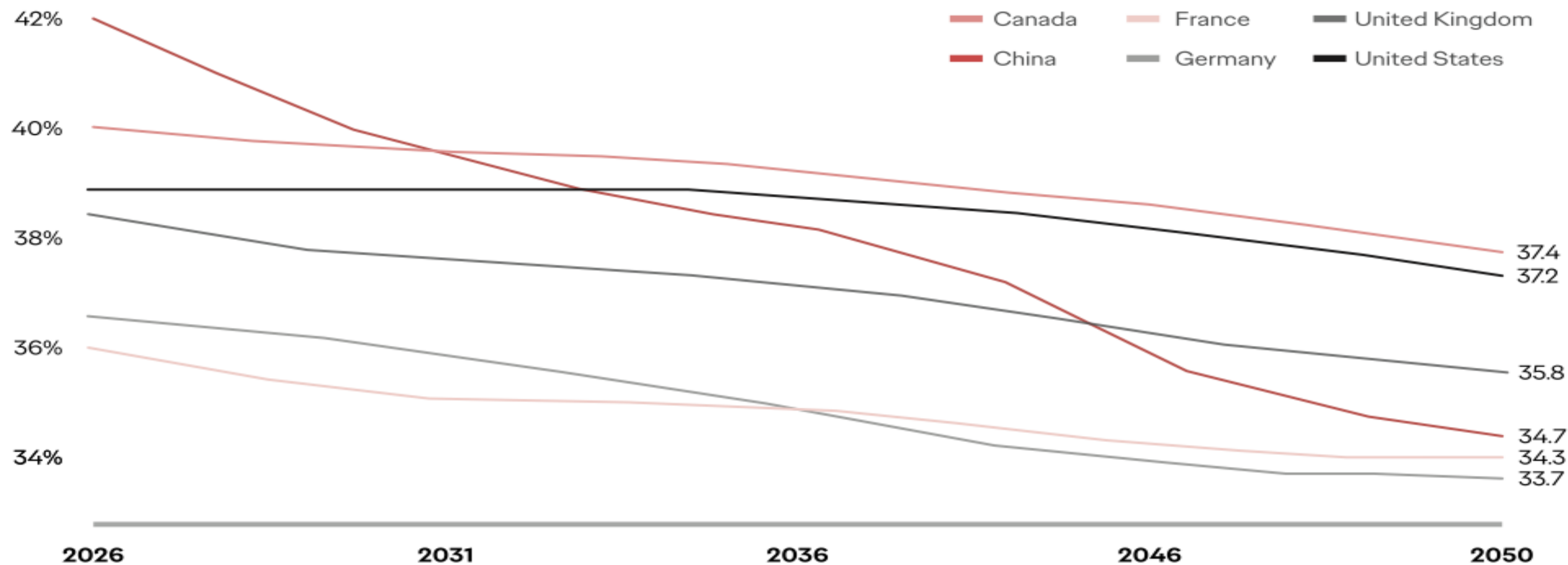


Source: “Globalization is in retreat for the first time since the second world war,” Peterson Institute for International Economics, 2022.

FORECAST 2030

Talent Scarcity and Workforce Realignment

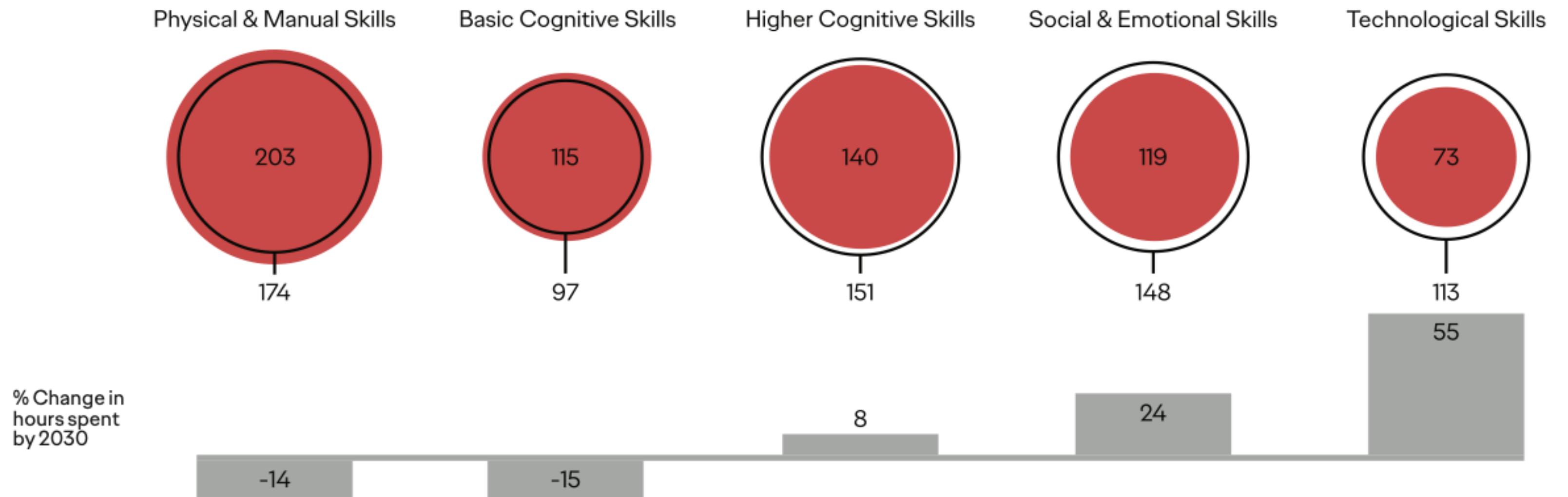
AGE 25-54 POPULATION AS A PERCENTAGE OF TOTAL, BY COUNTRY



FORECAST 2030

TOTAL HOURS WORKED IN EUROPE AND THE US, 2016 VS 2030, ESTIMATE IN BILLIONS

● 2016 ○ 2030



Source: "Skill Shift: Automation and the Future of the Workforce," McKinsey Global Institute, 2018.

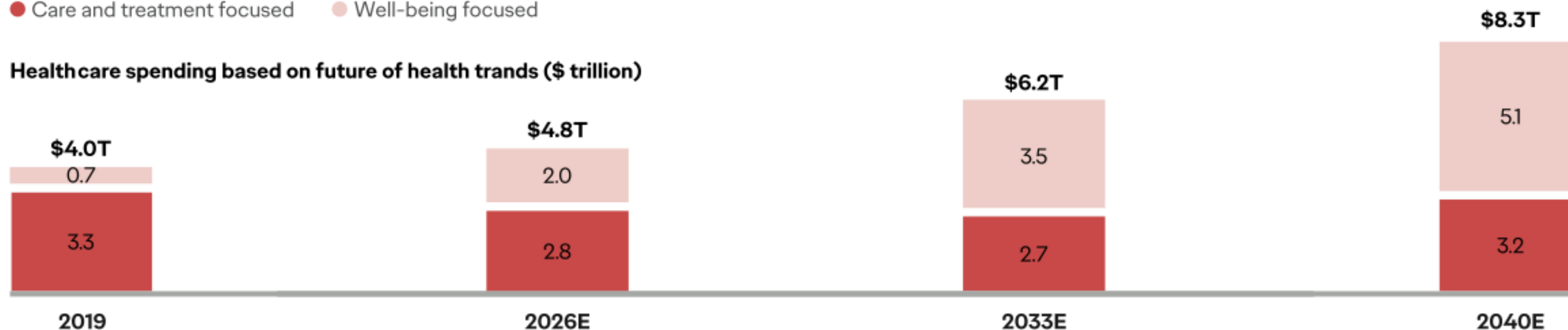
FORECAST 2030

First, Do No Harm

HEALTHCARE SPENDING SHIFTS FROM TREATMENT TO PREVENTION

● Care and treatment focused ● Well-being focused

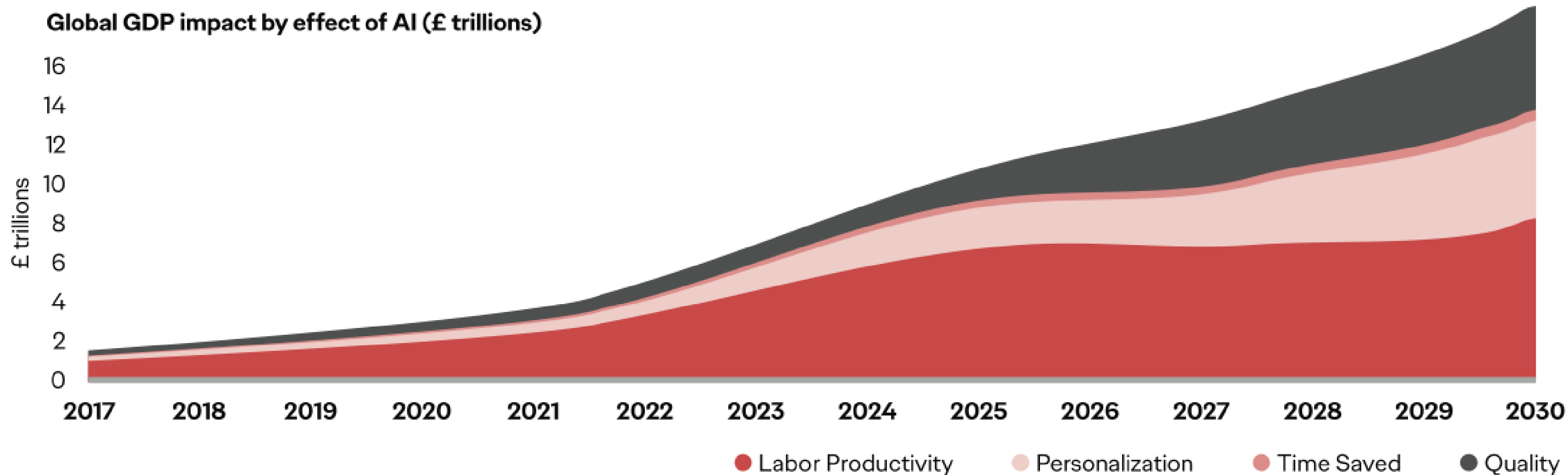
Healthcare spending based on future of health trends (\$ trillion)



Source: "Breaking the Cost Curve," Deloitte Insights, 2021.

FORECAST 2030

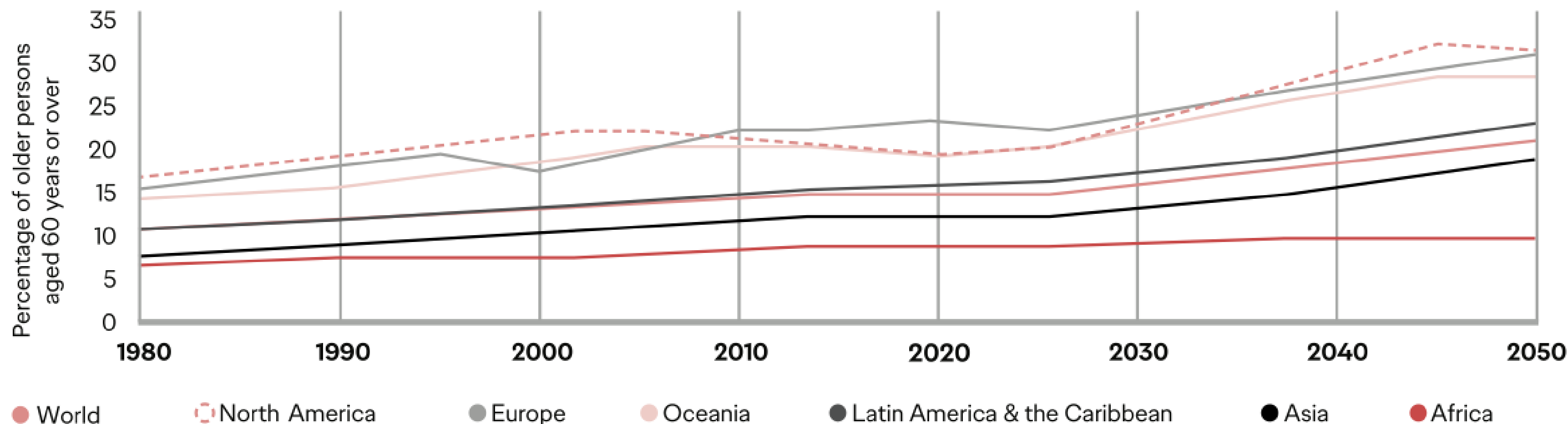
WHERE WILL THE VALUE GAINS FROM AI COME FROM (£ trillions)



Source: "Sizing the prize What's the real value of AI for your business and how can you capitalise?" PwC, 2017.

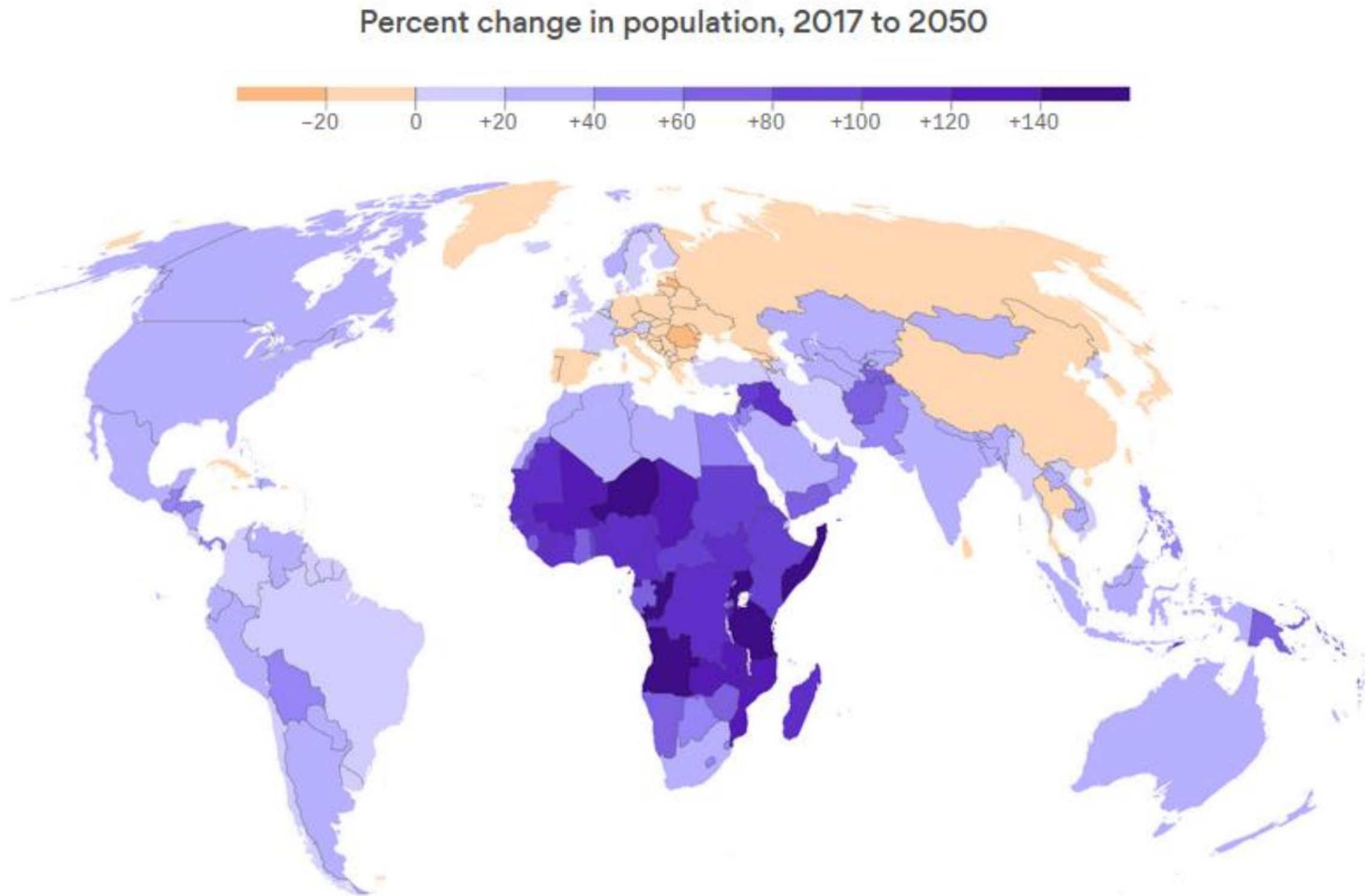
FORECAST 2030

THE GLOBAL INCREASE IN THE SENIOR POPULATION



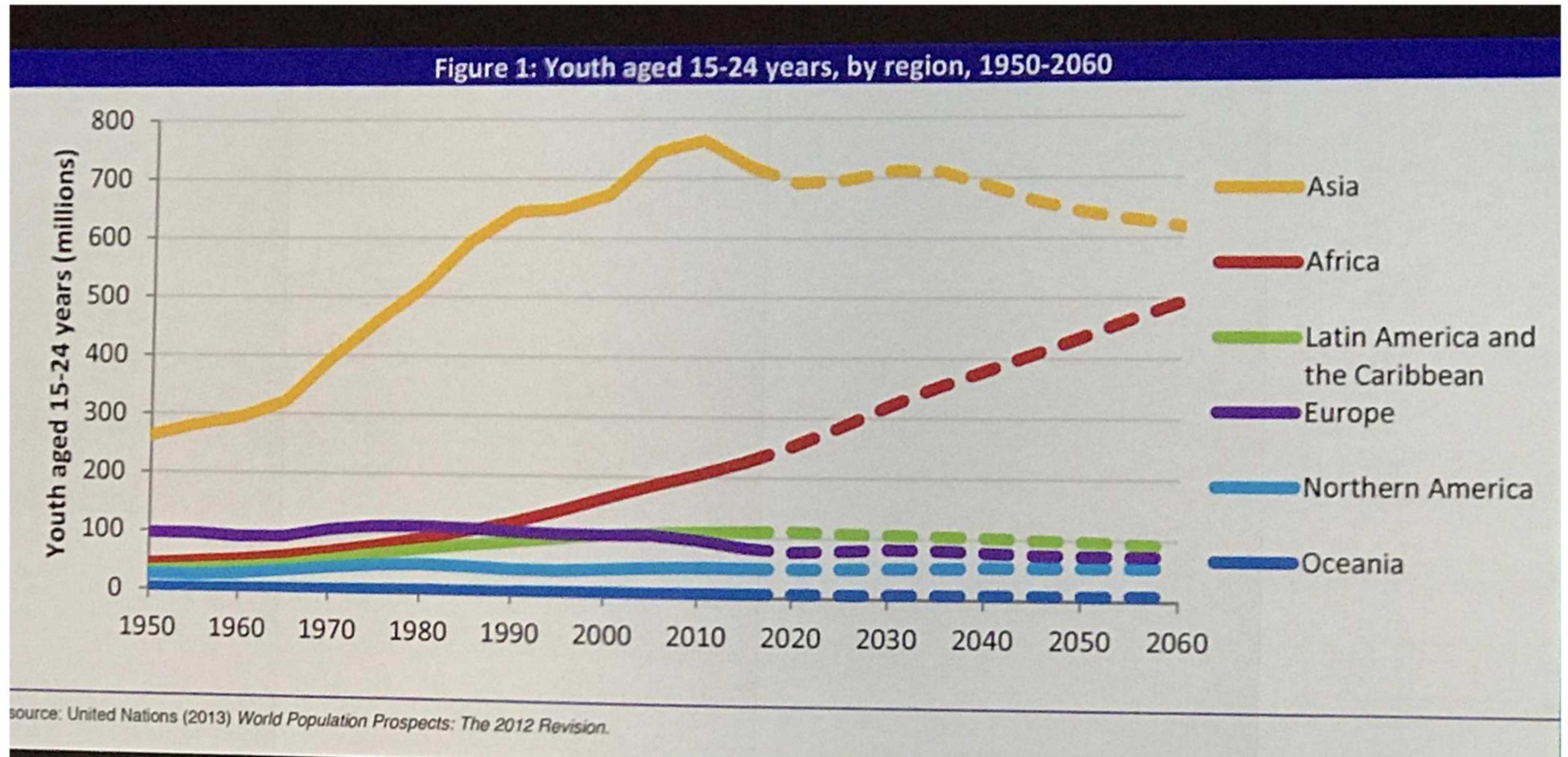
Source: "Ageing, Older Persons, and the 2030 Agenda for Sustainable Development," The United Nations.

Rates of natural population increase (%)



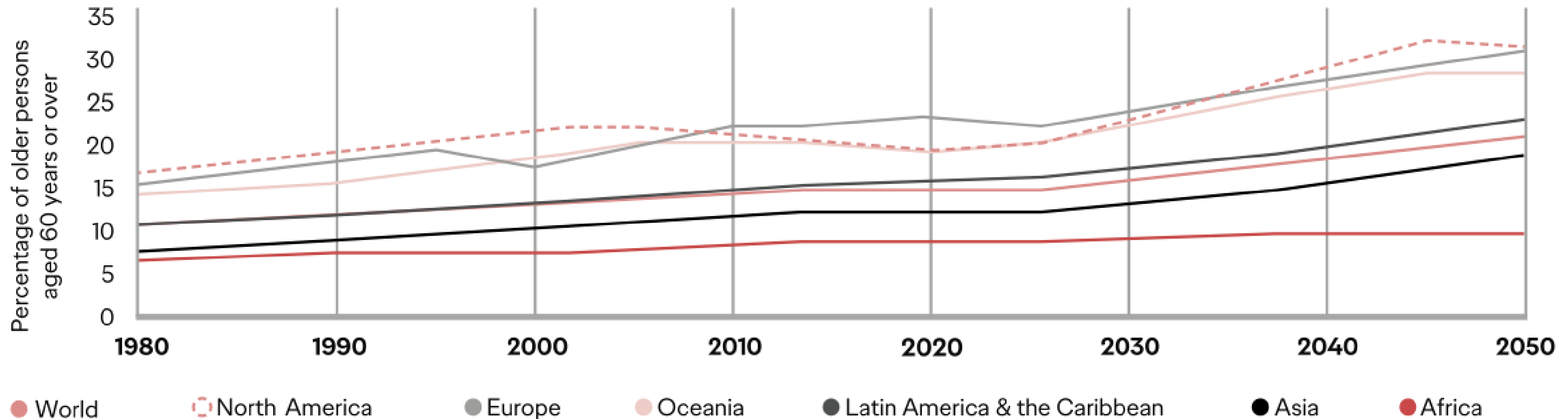
Source: <https://www.axios.com/2019/05/15/world-population-countries-growing-shrinking>

Population Youth Prospects

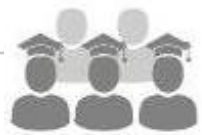


FORECAST 2030

THE GLOBAL INCREASE IN THE SENIOR POPULATION



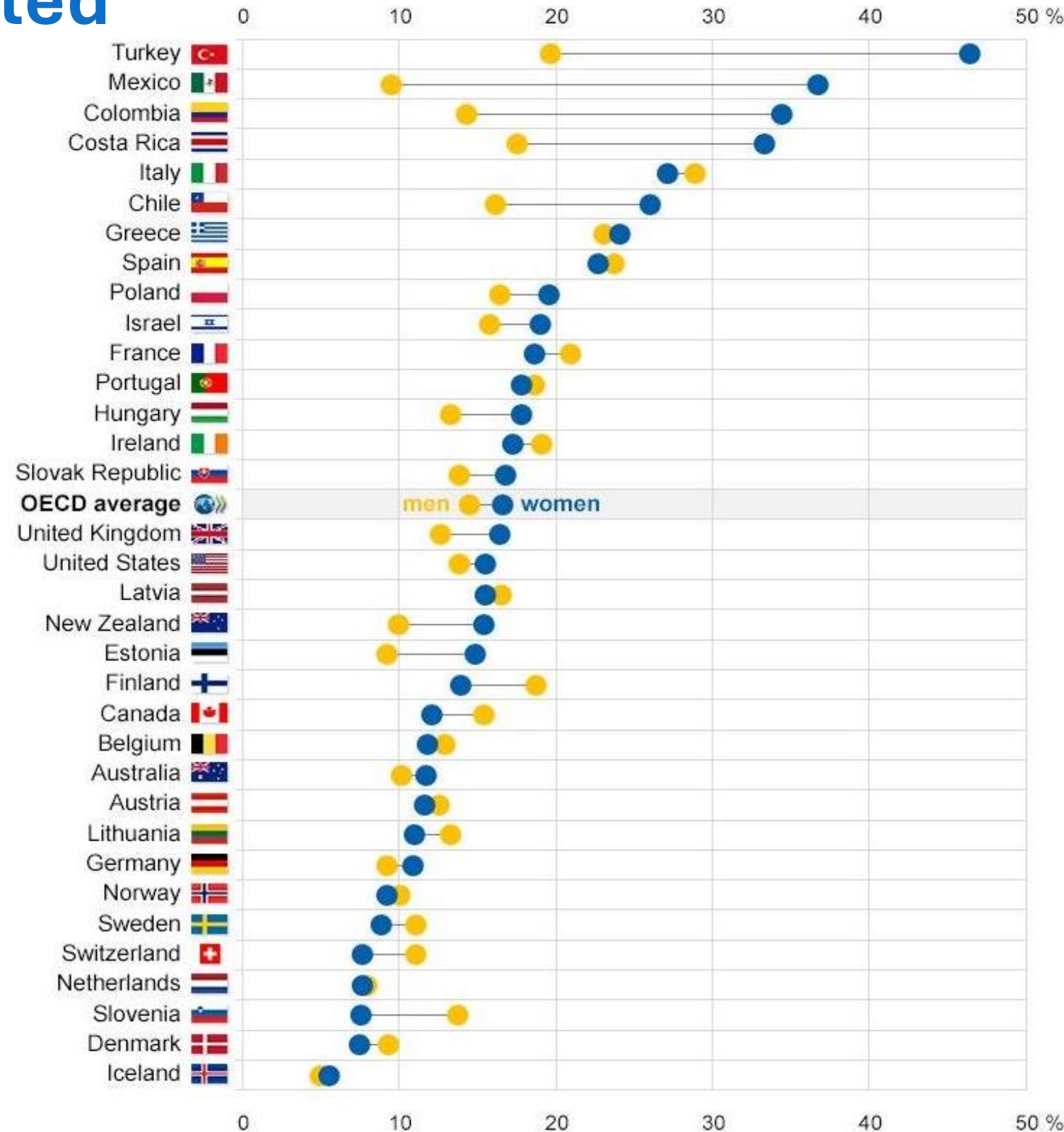
Source: "Ageing, Older Persons, and the 2030 Agenda for Sustainable Development," The United Nations.



Disconnected youth - NEET rates by gender

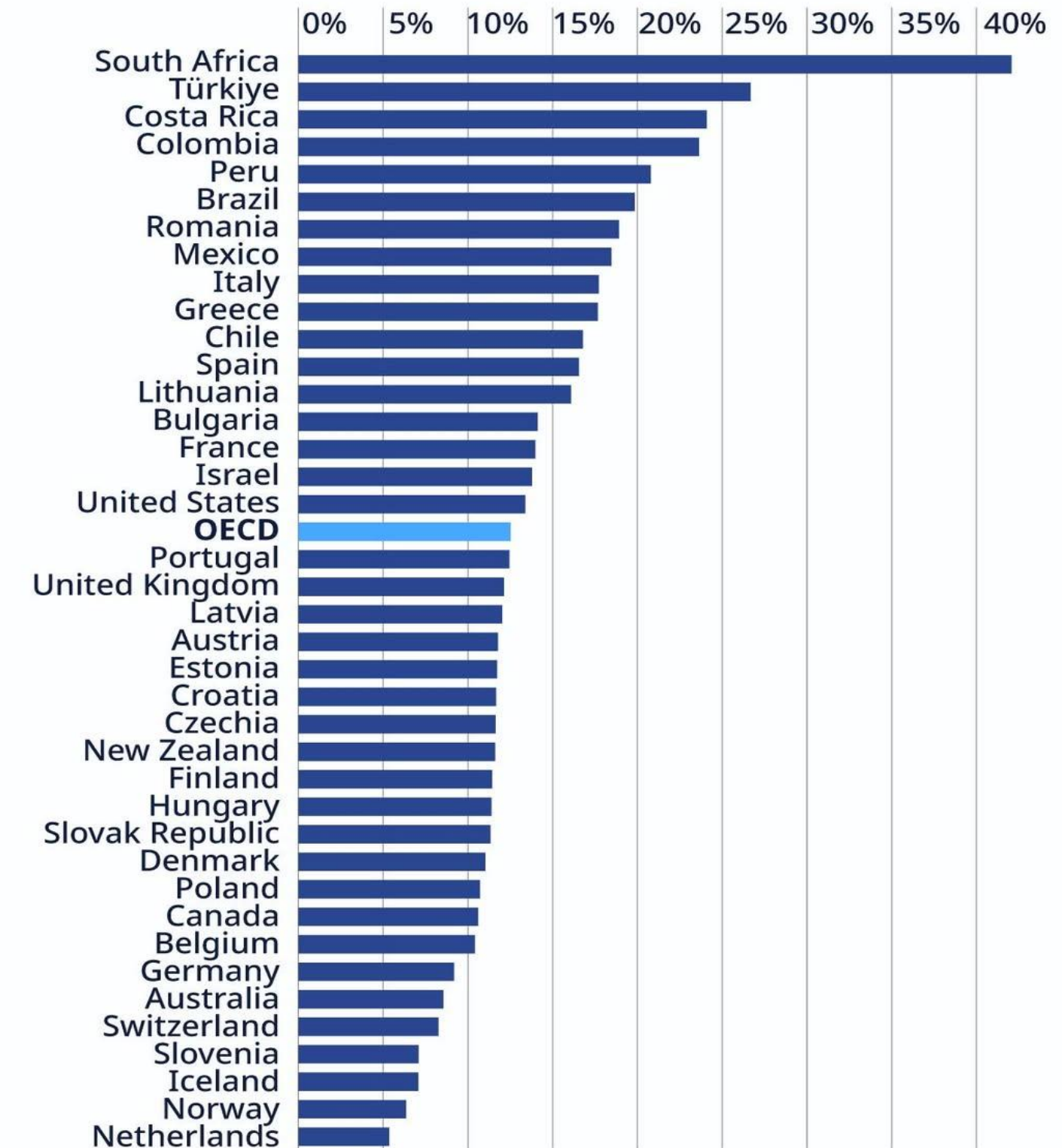
Percentage of 18-24 year-olds neither in employment nor in education or training
OECD and partner countries (2016 or latest available)

Disconnected Youth



Not in employment, education or training (NEET) rates for 15-29 year-olds

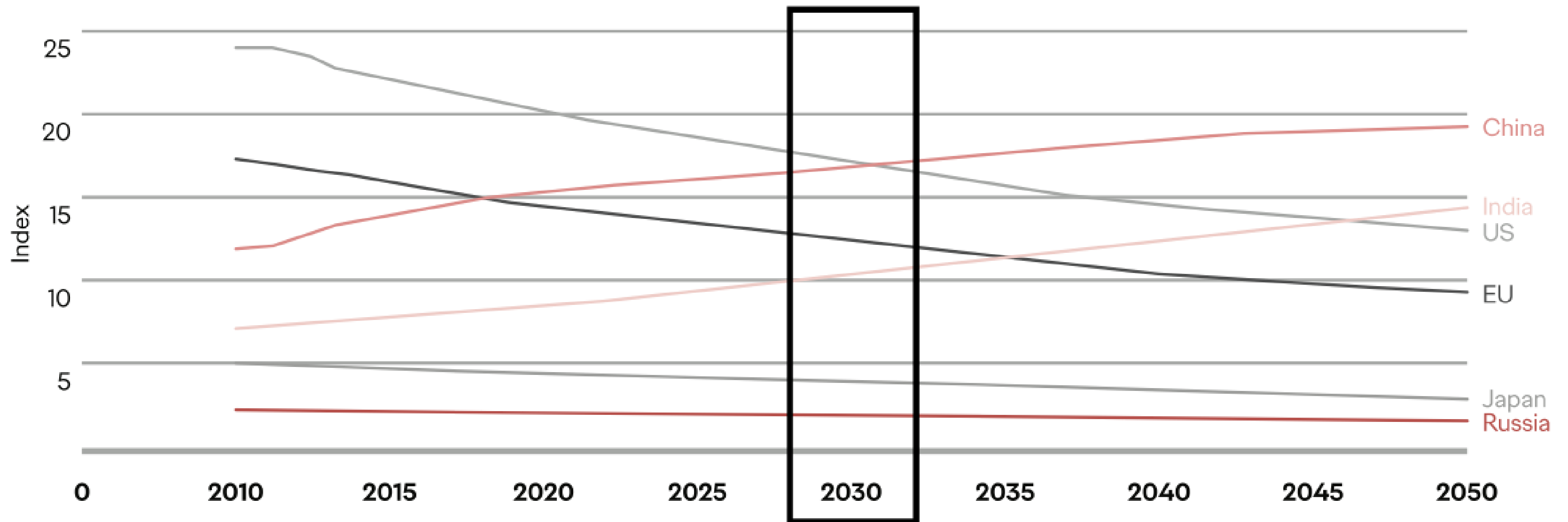
% of 15-29 year-olds not in employment, education or training (NEET), 2023 or latest available year



FORECAST 2030

THE WANING OF US HEGEMONY

Traditional, four-component power forecast



Source: "Global Trends 2030: Alternative Worlds," National Intelligence Council, 2012.

FORECAST 2030

. . . the idea of the future being different from the present
is so **repugnant** to our conventional modes of thought
and behavior
that we, most of us, offer a **great resistance** to acting on
it in practice.

John Maynard Keynes, 1937

Behavioral Insights

Behavioral Insights offer new solutions to policy problems!!!

Cross Correlation

Nudge theory has been applied across various cultures.

Behavioral studies explore how nudges work differently in diverse contexts, as cultural norms, values, and cognitive biases influence decision-making.

“Nudge Theory”

Nudge theory is a **flexible** and modern concept for:

- **How** people think, decide and behave
- People to improve their **DMP**
- Managing **change** of all sorts
- Identifying and modifying existing **influences** on people.

“Key Findings”

Cultural Differences in Decision-Making:

- **Individualistic vs. Collectivist** : In individualistic cultures (e.g., the U.S., Western Europe), nudges emphasizing **personal benefits** may work better. In collectivist cultures (e.g., East Asia, Africa), nudges highlighting **group benefits or social norms** may be more effective.
- **High-Context vs. Low-Context** : High-context cultures (e.g., Japan, China) rely more on **implicit communication and social cues**, while low-context cultures (e.g., Germany, U.S.) prefer **explicit information**.

“Key Findings”

Trust in Institutions:

- In cultures with **high trust** in government or institutions, nudges from **authoritative sources** are more likely to succeed. In **low-trust** cultures, nudges may need to come from **community leaders or peers**.

Risk Aversion and Time Orientation:

- Cultures with a **long-term orientation** (e.g., East Asia) may respond better to nudges promoting **future benefits** (e.g., saving for retirement). **Short-term**-oriented cultures may need more immediate incentives^{es}.

“Key Findings”

Religious and Ethical Values:

- Nudges that **align with cultural or religious values** (e.g., environmental stewardship in eco-conscious cultures) are more likely to succeed.

Adaptation of Nudges:

- **Successful nudges in one culture may fail in another.** Eg. a nudge encouraging energy conservation by **highlighting cost savings** may work in....., but in a culture where environmental responsibility is highly valued, **emphasizing ecological benefits** may be more effective.

“Examples”

Organ Donation:

- In countries with **opt-out** systems (Spain, Austria), organ donation rates are higher due to the default effect. However, this approach may not work as well in cultures where autonomy and individual choice are highly valued.

Tax Compliance:

- In the U.K., sending letters **emphasizing social norms** (e.g., "most people pay their taxes on time") increased compliance. In other cultures, emphasizing **penalties or moral duty** might be more effective.

“Examples”

Health Behaviors:

- In Japan, promoting walking (e.g., step-counting challenges) align with **cultural values of discipline and health**. In the U.S., similar nudges might focus on personal **fitness goals**.

Environmental Conservation:

- In Scandinavian, emphasizing **collective responsibility** for the environment are effective due to strong cultural norms around sustainability. In other regions, **financial incentives** might be more persuasive.

“Challenges”

Ethical Concerns: Nudges can be seen as **manipulative**, especially if they conflict with cultural values or are imposed by external authorities.

Cultural Sensitivity: Nudges must be designed with an **understanding of local customs, beliefs, and social structures**.

Measurement of Effectiveness: The impact of nudges can be **difficult to measure** across cultures due to varying contexts and baseline behaviors.

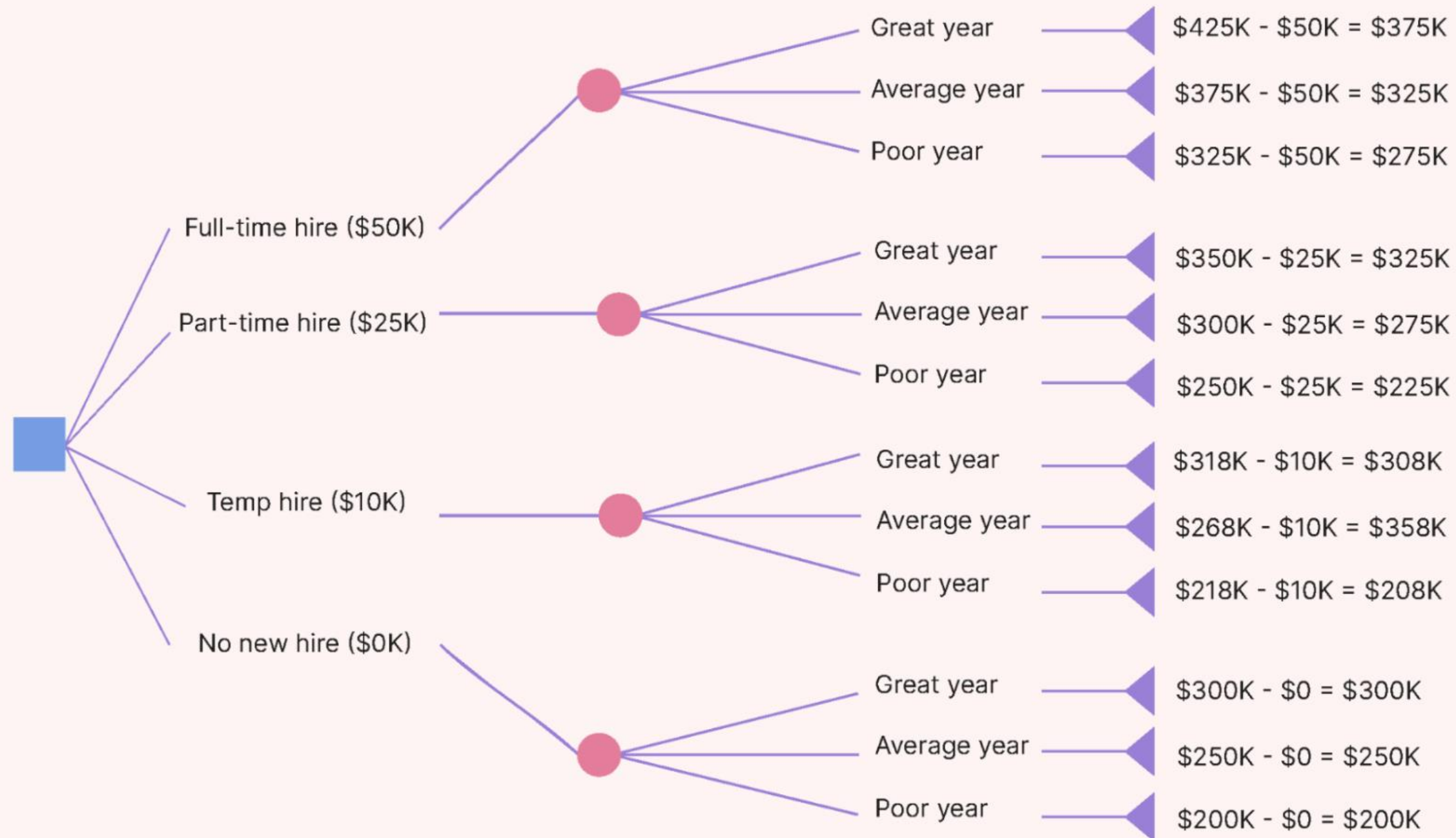
“Challenges”

Nudge theory offers a powerful tool for influencing behavior, but its effectiveness is highly context-dependent. Cross-cultural research highlights the importance of **tailoring nudges to align with cultural norms, values, and decision-making processes.** By understanding these nuances, policymakers and organizations can design more effective and culturally sensitive interventions.

“Deep Fix”

Don't try to CHANGE the MIND
but
CHANGE the CONTEXT...

“Decision Tree”



Judgement Under Uncertainty

You are a general of a 600-person army, surrounded by enemy forces, and you have 2 options:

1. Will **save** 200 soldiers.
2. Probability of **2/3** that **all will die** and 1/3 that all 600 will live.

Judgement Under Uncertainty

You are a general of a 600-person army, surrounded by enemy forces, and you have two possible options:

1. Will save 200 soldiers.
2. Probability of $\frac{2}{3}$ that all will die and $\frac{1}{3}$ that all 600 will live.

75% people choose #1.
Option #2 results in more deaths.

Judgement Under Uncertainty

Under the same scenario, you are the general, surrounded by enemy, and you have **two other** possible options:

1. **400 of your soldiers will die.**
2. **Probability of 1/3 all will live and 2/3 that all 600 will die.**

Judgement Under Uncertainty

1. 400 of your soldiers will die.
2. Probability of $\frac{1}{3}$ all will live and $\frac{2}{3}$ that all 600 will die.

80% choose #2.
Option #1 will lead to 400 deaths.

People tend to avoid risk when seeking gains, but choose risk when trying to avoid losses.

People tend to avoid risk when seeking gains, but choose risk when trying to avoid losses.

Will save 200 soldiers.

Probability of $\frac{2}{3}$ that all will die and $\frac{1}{3}$ that all 600 will live.

400 of your soldiers will die.

Probability of $\frac{1}{3}$ all will live and $\frac{2}{3}$ that all 600 will die.

Behavioral Insights: Pre Discussion

Positive COVID tests results:

- Monday 21st of Feb: 880 positive
- Next Monday 1st of March: 2.147 positive

Are we getting better or worse? Do we need a lockdown?

Positive COVID Rapid results:

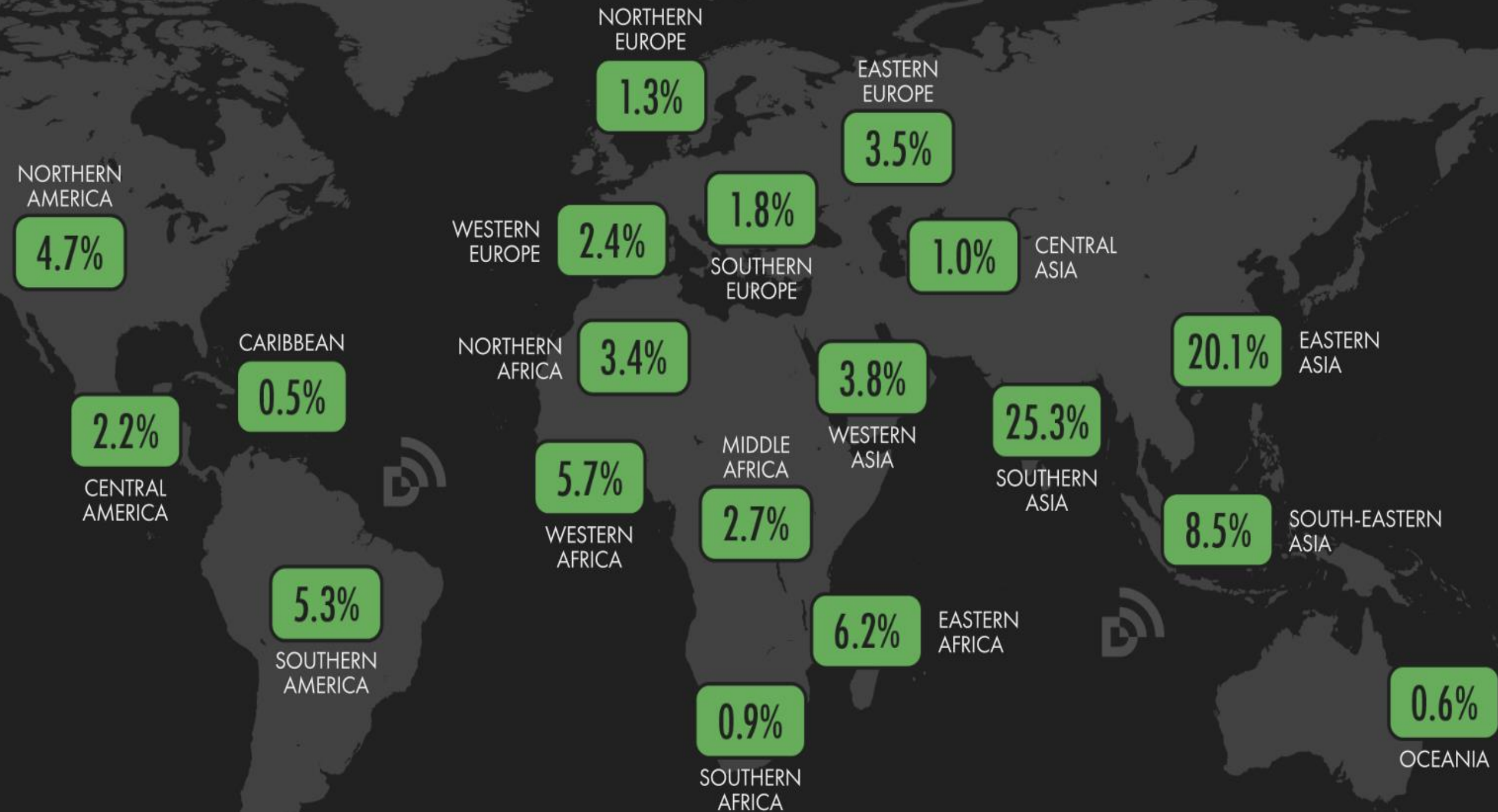
- Monday 21st of Feb: 880 out of 15.610 tests (5%)
- Next Monday : 2.147 positive out of 55.543 tests (3,8%)

Do we still need a lockdown?

JUL
2025

SHARE OF THE GLOBAL POPULATION BY REGION

THE NUMBER OF PEOPLE LIVING IN EACH REGION AS A PERCENTAGE OF THE TOTAL GLOBAL POPULATION



JUL
2025

COUNTRIES WITH THE LARGEST POPULATIONS

THE COUNTRIES AND TERRITORIES WITH THE LARGEST POPULATIONS



GLOBAL OVERVIEW

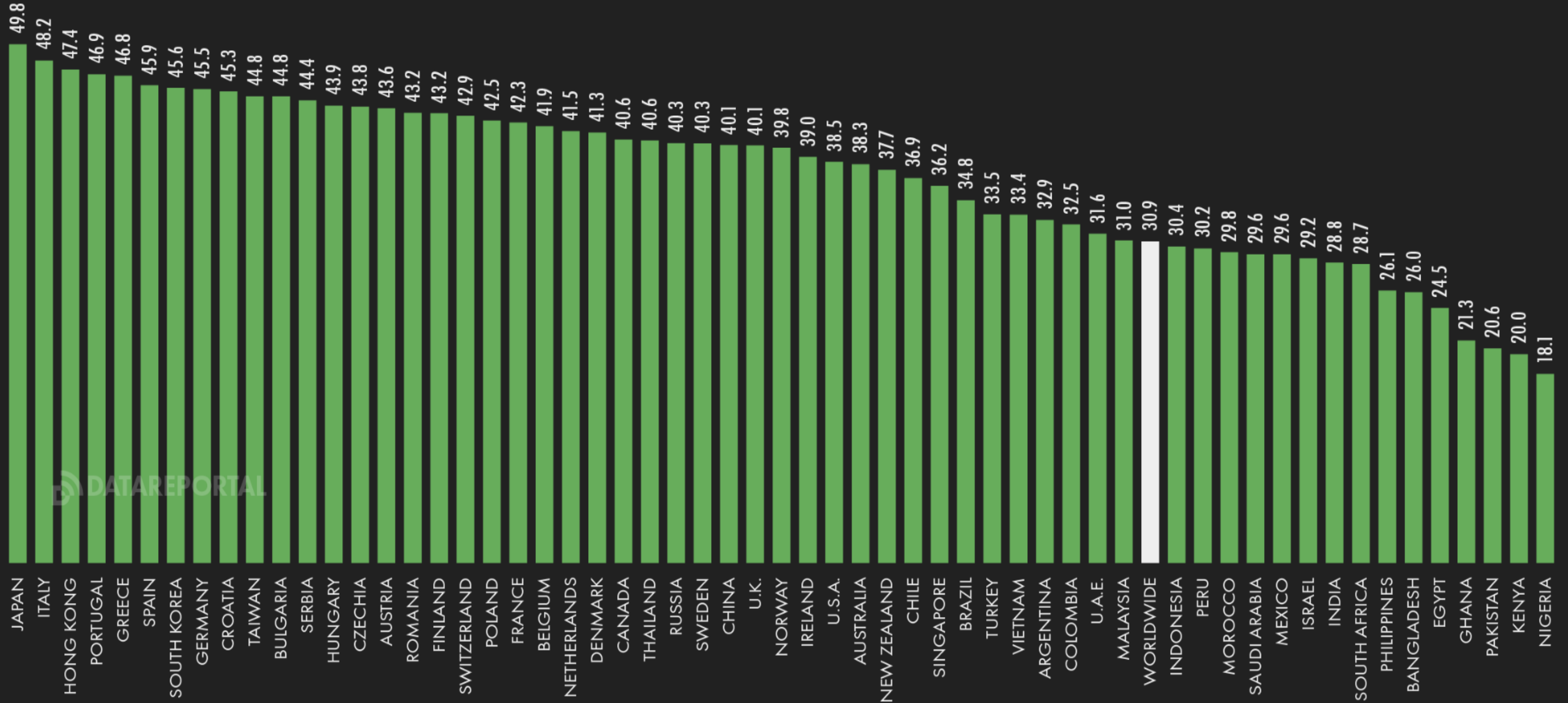
#	COUNTRY	POPULATION	▲YOY	vs. 🌐
01	INDIA	1,463,866,000	+0.89%	17.78%
02	CHINA	1,416,096,000	-0.23%	17.20%
03	UNITED STATES OF AMERICA	347,276,000	+0.54%	4.22%
04	INDONESIA	285,721,000	+0.79%	3.47%
05	PAKISTAN	255,220,000	+1.57%	3.10%
06	NIGERIA	237,528,000	+2.08%	2.89%
07	BRAZIL	212,812,000	+0.38%	2.59%
08	BANGLADESH	175,687,000	+1.22%	2.13%
09	RUSSIAN FEDERATION	143,997,000	-0.57%	1.75%
10	ETHIOPIA	135,472,000	+2.58%	1.65%

#	COUNTRY	POPULATION	▲YOY	vs. 🌐
11	MEXICO	131,947,000	+0.83%	1.60%
12	JAPAN	123,103,000	-0.52%	1.50%
13	EGYPT	118,366,000	+1.57%	1.44%
14	PHILIPPINES	116,787,000	+0.81%	1.42%
15	DEM. REP. OF THE CONGO	112,832,000	+3.25%	1.37%
16	VIETNAM	101,599,000	+0.60%	1.23%
17	IRAN	92,418,000	+0.93%	1.12%
18	TURKEY	87,685,000	+0.24%	1.07%
19	GERMANY	84,075,000	-0.56%	1.02%
20	THAILAND	71,620,000	-0.07%	0.87%

JUL
2025

MEDIAN AGE OF THE POPULATION

THE AGE AT WHICH THERE ARE EQUAL NUMBERS OF PEOPLE BOTH ABOVE AND BELOW THAT AGE IN THE TOTAL POPULATION



JUL
2025

DEVICE OWNERSHIP

PERCENTAGE OF INTERNET USERS AGED 16+ WHO OWN EACH KIND OF DEVICE



GLOBAL OVERVIEW

DATA REPORTAL
GWI.

MOBILE PHONE (ANY)

97.7%

SMARTPHONE

97.5%

LAPTOP OR DESKTOP COMPUTER

57.3%

SMART TV

50.1%

SMART WRIST DEVICE (ANY)

33.0%

TABLET DEVICE

33.0%

SMARTWATCH

27.6%

GAMES CONSOLE

18.5%

SMART HOME DEVICE

17.7%

TV STREAMING DEVICE

17.7%

SMART WRISTBAND

13.6%

E-READER

9.3%

6.6% FEATURE PHONE

5.6% VIRTUAL REALITY DEVICE

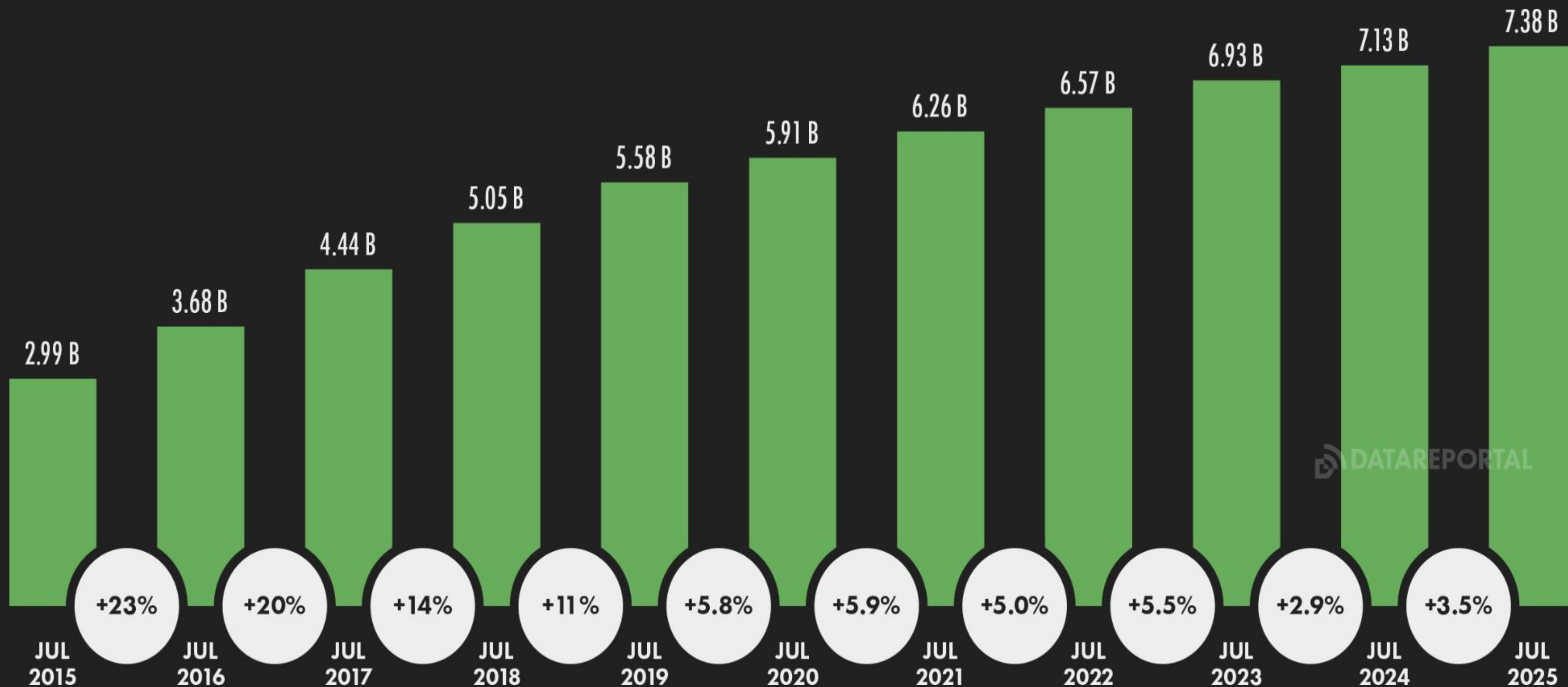
**JUL
2025**

NUMBER OF SMARTPHONES IN USE

NUMBER OF SMARTPHONE HANDSETS IN USE AROUND THE WORLD



GLOBAL OVERVIEW



JUL
2025

OVERVIEW OF INTERNET USE

ESSENTIAL INDICATORS OF INTERNET ADOPTION AND USE

NOTE: GWI MADE SIGNIFICANT CHANGES TO ITS APPROACH TO SURVEYING TIME SPENT WITH MEDIA IN Q4 2024, SO VALUES FOR TIME SPENT SHOWN HERE ARE **NOT COMPARABLE** WITH PREVIOUS REPORTS

GLOBAL OVERVIEW

INDIVIDUALS
USING THE
INTERNET



5.65
BILLION

INDIVIDUALS USING THE
INTERNET AS A PERCENTAGE
OF TOTAL POPULATION



68.7%
YOY: +1.8% (+121 BPS)

YEAR-ON-YEAR CHANGE IN
THE NUMBER OF INDIVIDUALS
USING THE INTERNET



+2.7%
+146 MILLION

PERCENTAGE OF THE
TOTAL FEMALE POPULATION
THAT USES THE INTERNET



66.5%
YOY: +3.7% (+234 BPS)

PERCENTAGE OF THE
TOTAL MALE POPULATION
THAT USES THE INTERNET



70.8%
YOY: +2.7% (+183 BPS)

AVERAGE WEEKLY TIME SPENT
CONSUMING ONLINE MEDIA
BY EACH INTERNET USER



33H 42M

PERCENTAGE OF USERS
ACCESSING THE INTERNET
VIA MOBILE PHONES



95.9%
YOY: [UNCHANGED]

PERCENTAGE OF USERS
ACCESSING THE INTERNET
VIA LAPTOPS AND DESKTOPS



60.7%
YOY: -2.4% (-150 BPS)

PERCENTAGE OF THE
TOTAL URBAN POPULATION
THAT USES THE INTERNET



83.6%
YOY: +3.7% (+292 BPS)

PERCENTAGE OF THE
TOTAL RURAL POPULATION
THAT USES THE INTERNET



47.9%
YOY: +2.8% (+131 BPS)

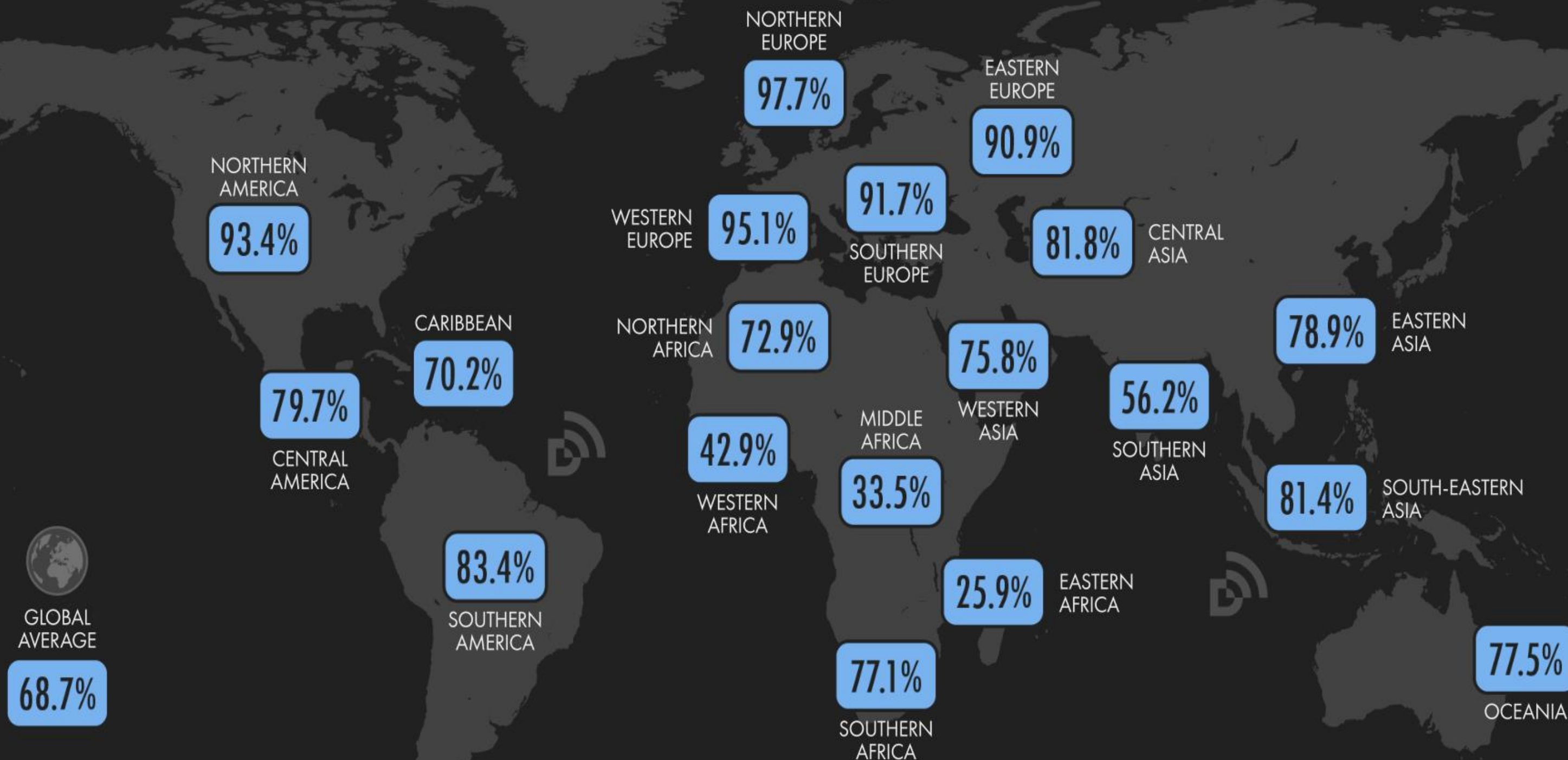
JUL
2025

INTERNET ADOPTION

INDIVIDUALS USING THE INTERNET AS A PERCENTAGE OF TOTAL POPULATION



GLOBAL OVERVIEW



JUL
2025

UNCONNECTED POPULATIONS

COUNTRIES AND TERRITORIES WITH THE LARGEST UNCONNECTED POPULATIONS AND THE LOWEST LEVELS OF INTERNET ADOPTION



GLOBAL OVERVIEW

ABSOLUTE: LARGEST UNCONNECTED POPULATIONS

#	LOCATION	UNCONNECTED INDIVIDUALS	% OF POP. OFFLINE
01	INDIA	608,335,000	41.6%
02	CHINA	303,045,000	21.4%
03	PAKISTAN	138,942,000	54.4%
04	NIGERIA	129,001,000	54.3%
05	ETHIOPIA	106,469,000	78.6%
06	BANGLADESH	93,536,000	53.2%
07	DEM. REP. OF THE CONGO	78,364,000	69.5%
08	INDONESIA	62,030,000	21.7%
09	TANZANIA	50,043,000	70.9%
10	UGANDA	40,187,000	78.2%

RELATIVE: LOWEST LEVELS OF INTERNET ADOPTION

#	LOCATION	% OF POP. OFFLINE	UNCONNECTED INDIVIDUALS
01	NORTH KOREA ¹	>99%	[BLOCKED]
02	BURUNDI	88.9%	12,796,000
03	CENTRAL AFRICAN REPUBLIC	88.1%	4,859,000
04	SOUTH SUDAN	87.1%	10,615,000
05	CHAD	86.8%	18,235,000
06	YEMEN	82.3%	34,382,000
07	MALAWI	82.0%	18,220,000
08	MOZAMBIQUE	80.2%	28,561,000
09	ERITREA	80.0%	2,885,000
10	MADAGASCAR	79.6%	26,072,000

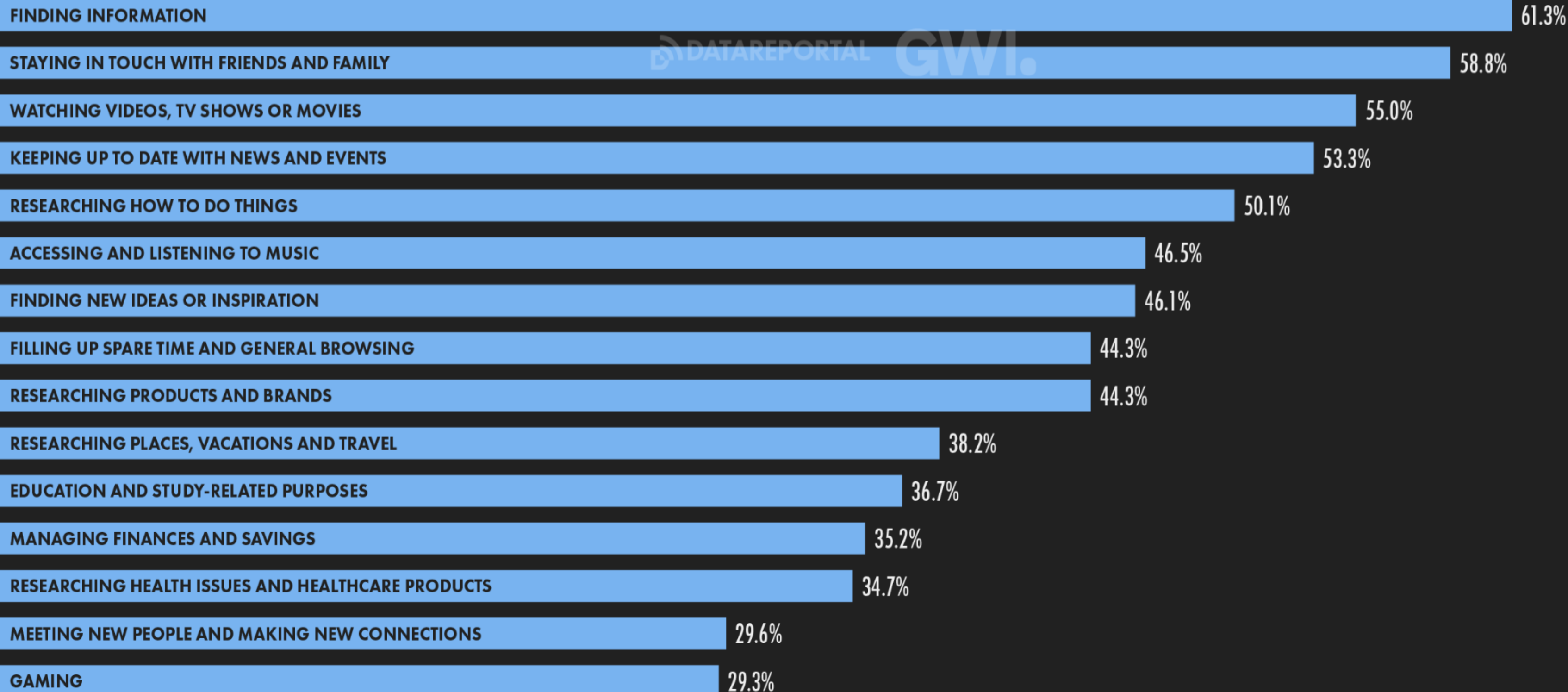
JUL
2025

MAIN REASONS FOR USING THE INTERNET

PRIMARY REASONS WHY INTERNET USERS AGED 16+ USE THE INTERNET



GLOBAL OVERVIEW



JUL
2025

OVERVIEW OF SOCIAL MEDIA USE

HEADLINES FOR SOCIAL MEDIA ADOPTION AND USE (NOTE: USER IDENTITIES MAY NOT REPRESENT UNIQUE INDIVIDUALS)

NOTE: GWI MADE SIGNIFICANT CHANGES TO ITS APPROACH TO SURVEYING TIME SPENT WITH MEDIA IN Q4 2024, SO VALUES SHOWN HERE ARE NOT COMPARABLE WITH PREVIOUS REPORTS



GLOBAL OVERVIEW

NUMBER OF SOCIAL
MEDIA USER IDENTITIES



5.41
BILLION

QUARTER-ON-QUARTER CHANGE
IN SOCIAL MEDIA USER IDENTITIES



+1.8%
+95 MILLION

YEAR-ON-YEAR CHANGE IN
SOCIAL MEDIA USER IDENTITIES

we
are
social



+4.7%
+241 MILLION

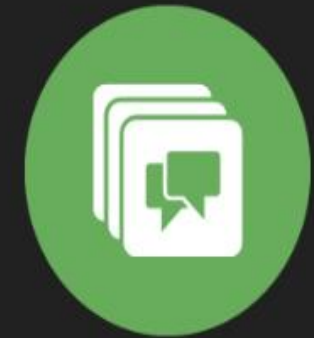
WEEKLY TIME SPENT USING
SOCIAL PLATFORMS (INC. VIDEO)



18H 46M

AVERAGE NUMBER OF SOCIAL
PLATFORMS USED EACH MONTH

GWI.



6.84
YOY: +2.6% (+0.18)

SOCIAL MEDIA
USER IDENTITIES vs.
TOTAL POPULATION



65.7%

SOCIAL MEDIA USER
IDENTITIES AGED 18+ vs.
POPULATION AGED 18+



88.9%

SOCIAL MEDIA USER
IDENTITIES vs. INDIVIDUALS
USING THE INTERNET



95.7%

FEMALE SOCIAL MEDIA USER
IDENTITIES vs. TOTAL SOCIAL
MEDIA USER IDENTITIES



45.4%

MALE SOCIAL MEDIA USER
IDENTITIES vs. TOTAL SOCIAL
MEDIA USER IDENTITIES

we
are
social



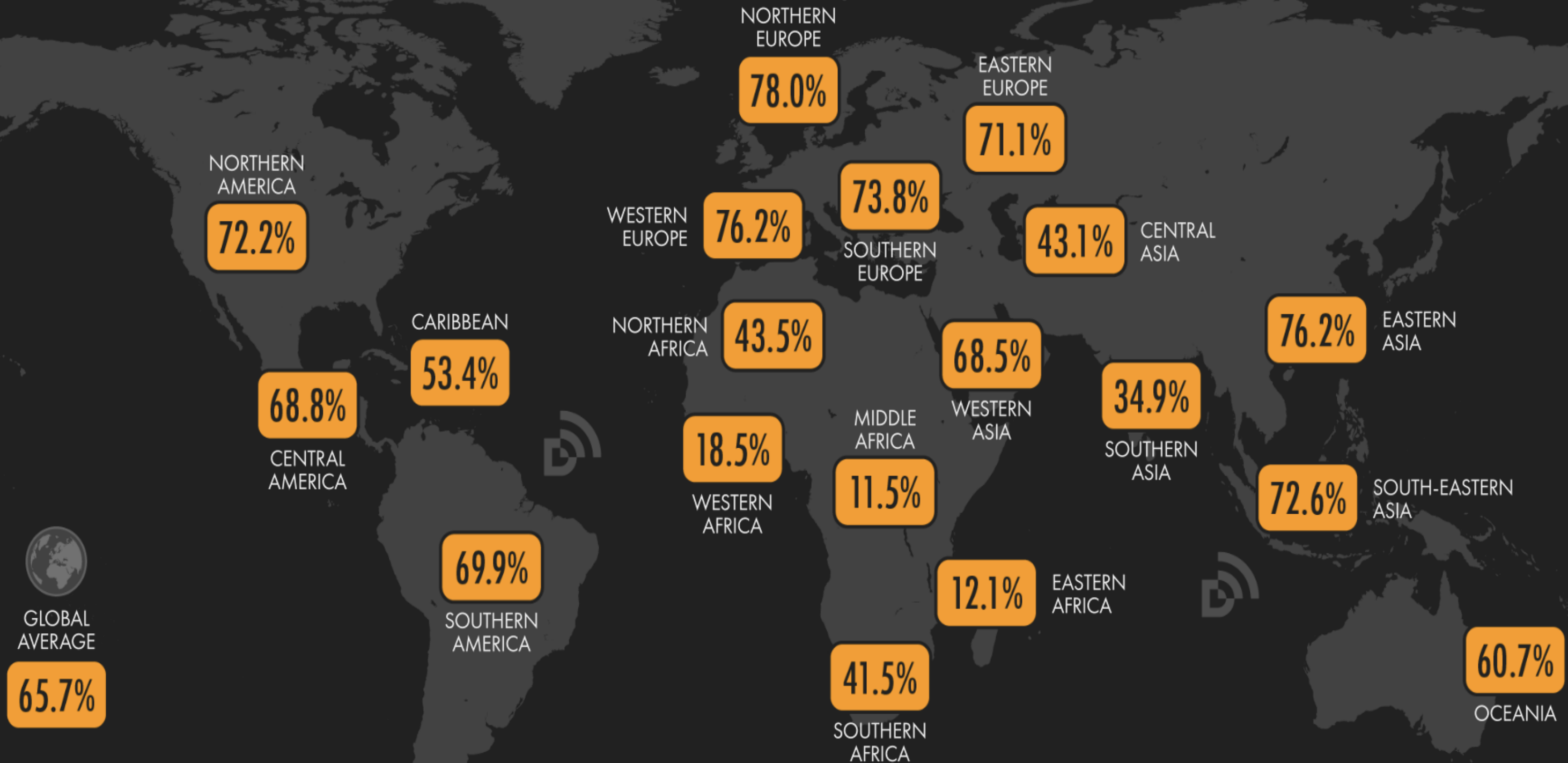
54.6%

JUL
2025

SOCIAL MEDIA USE vs. TOTAL POPULATION

SOCIAL MEDIA USER IDENTITIES AS A PERCENTAGE OF THE TOTAL POPULATION (NOTE: USER IDENTITIES MAY NOT REPRESENT UNIQUE INDIVIDUALS)

GLOBAL OVERVIEW



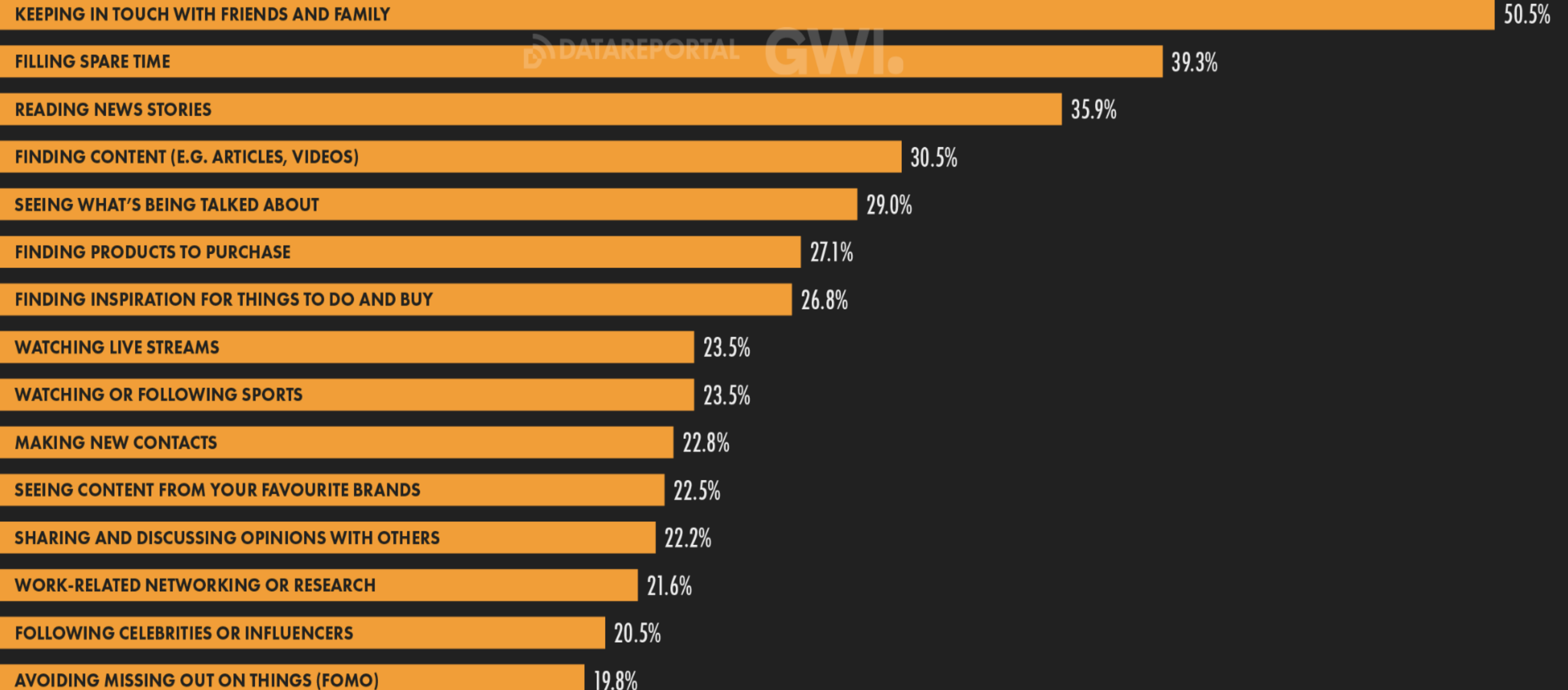
JUL
2025

MAIN REASONS FOR USING SOCIAL MEDIA

PRIMARY REASONS WHY SOCIAL MEDIA USERS AGED 16+ USE SOCIAL MEDIA PLATFORMS



GLOBAL OVERVIEW



JUL
2025

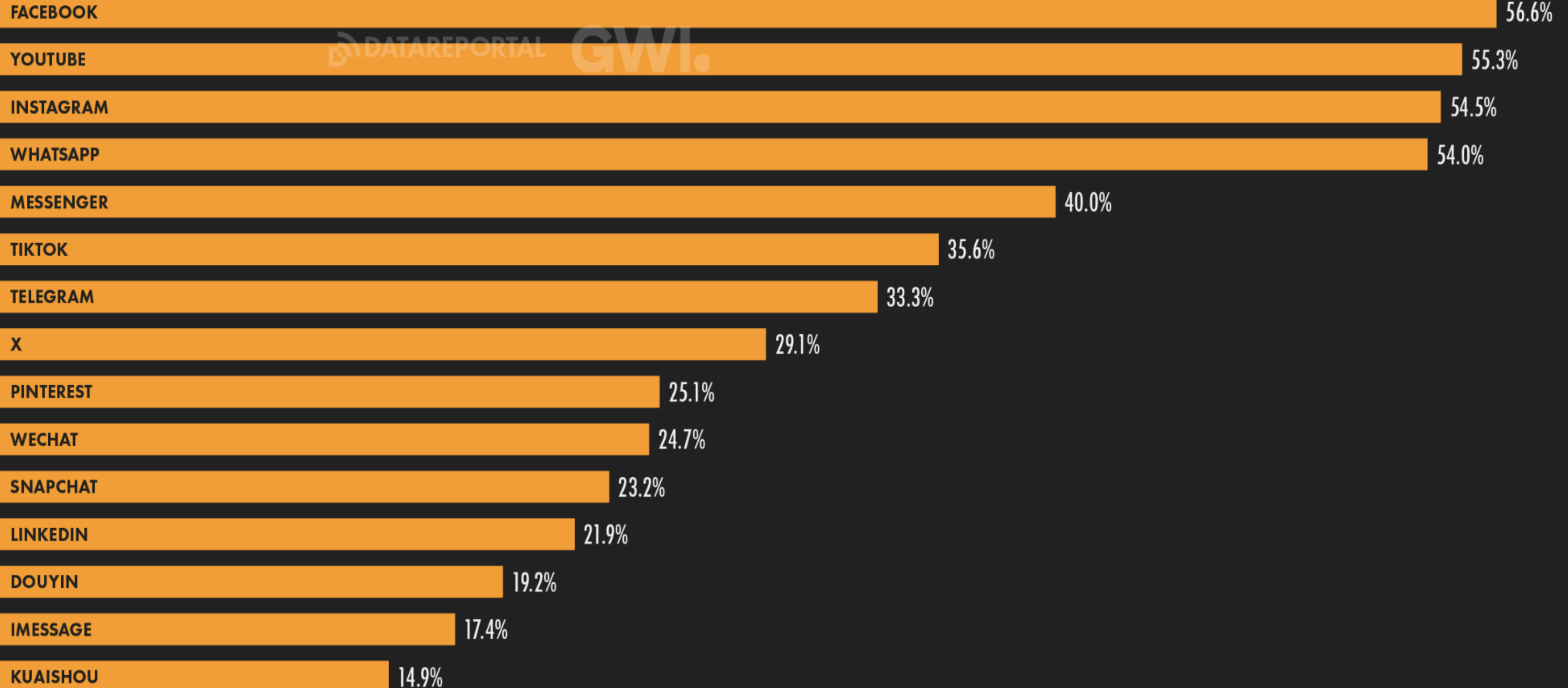
SELF-DECLARED PLATFORM USE

PERCENTAGE OF INTERNET USERS AGED 16+ WHO SAY THAT THEY USED THE RESPECTIVE PLATFORM AT LEAST ONCE WITHIN THE PAST MONTH



GLOBAL OVERVIEW

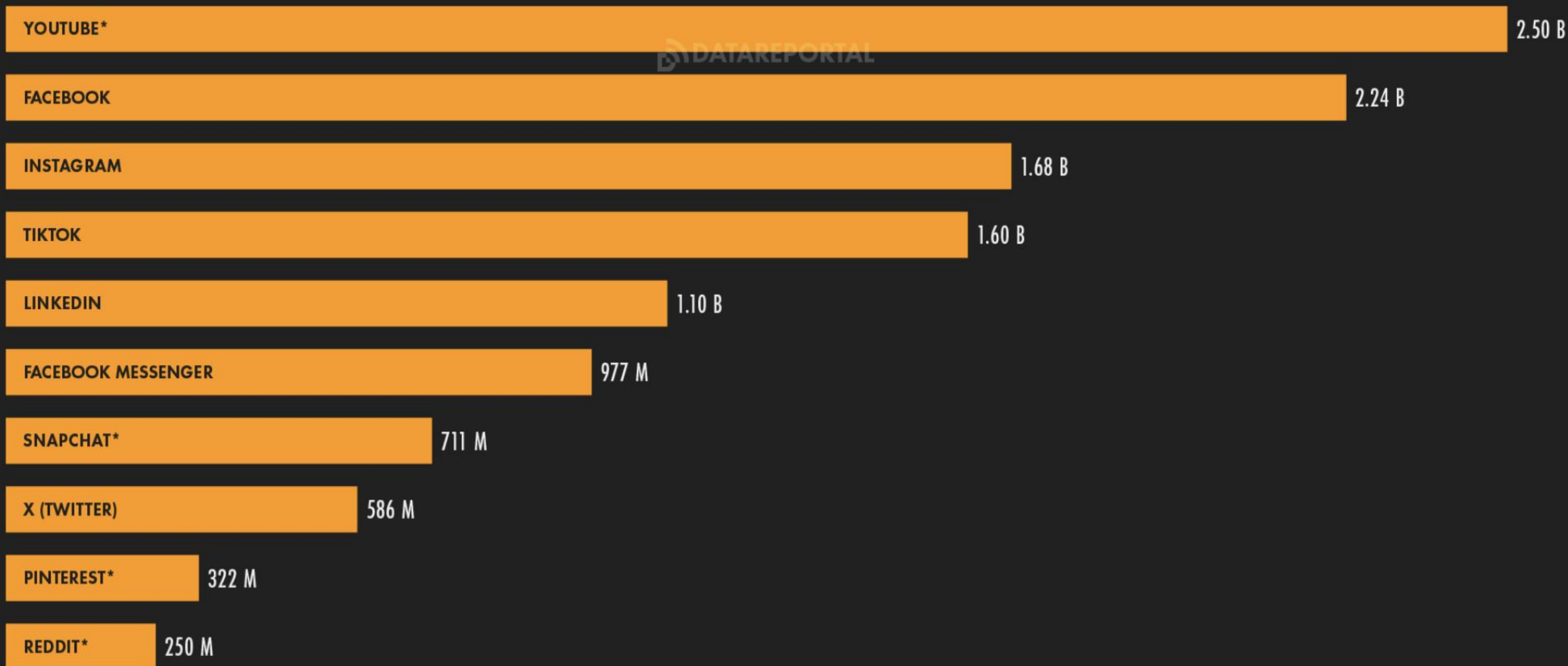
DATA REPORTAL GWI.



JUL
2024

SOCIAL MEDIA AD AUDIENCES: TOTAL REPORTED

POTENTIAL ADVERTISING REACH REPORTED BY TOP SOCIAL PLATFORMS (NOTE: USERS MAY NOT REPRESENT UNIQUE INDIVIDUALS)



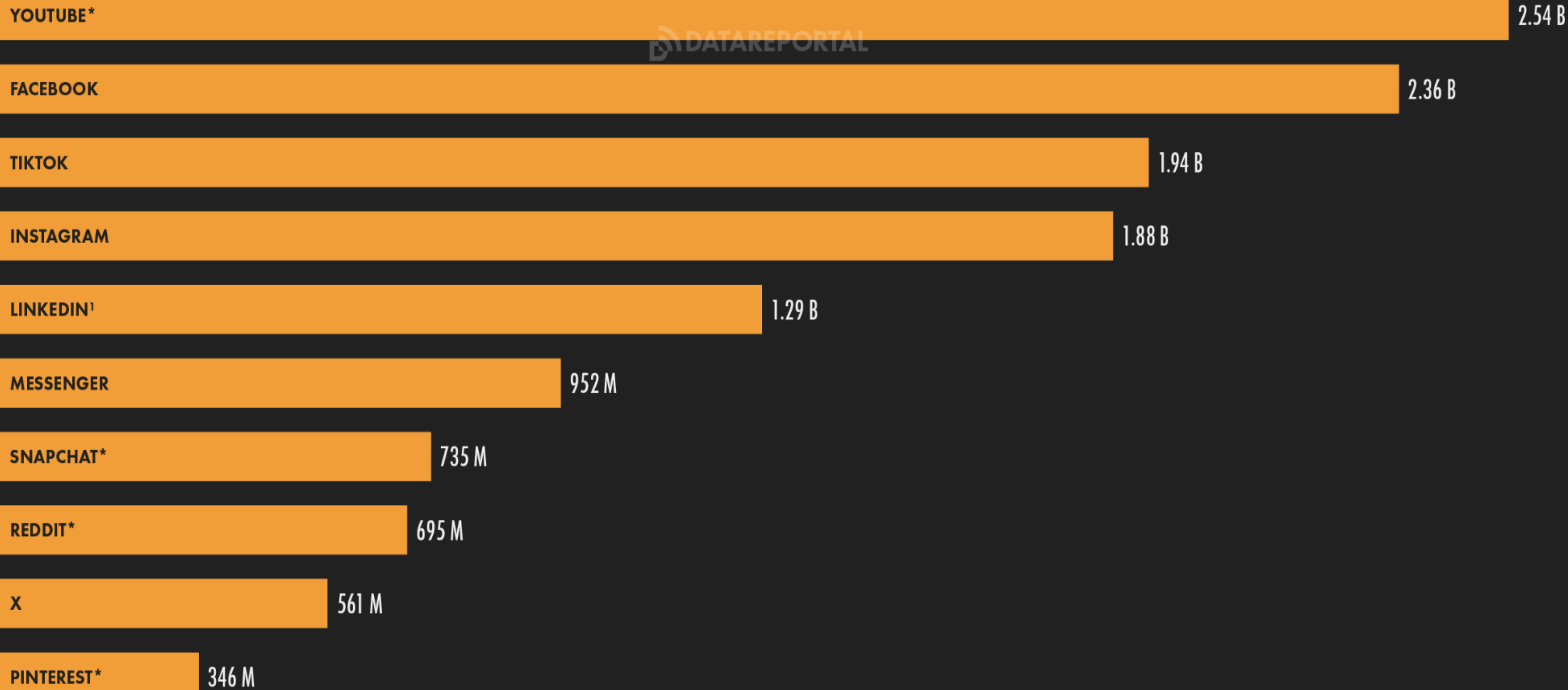
JUL
2025

SOCIAL MEDIA AD AUDIENCES: TOTAL REPORTED

POTENTIAL ADVERTISING REACH REPORTED BY TOP SOCIAL PLATFORMS (NOTE: USERS MAY NOT REPRESENT UNIQUE INDIVIDUALS)



GLOBAL OVERVIEW



JAN
2024

GREECE

OVERVIEW OF THE ADOPTION AND USE OF CONNECTED DEVICES AND SERVICES

NOTE: SIGNIFICANT REVISIONS TO SOURCE DATA MEAN THAT FIGURES SHOWN HERE ARE NOT COMPARABLE WITH PREVIOUS REPORTS. SEE THE IMPORTANT NOTES AT THE START OF THIS REPORT FOR DETAILS.



GREECE

TOTAL
POPULATION



we
are
social

10.32
MILLION

YEAR-ON-YEAR CHANGE

-0.4%
-38 THOUSAND

URBANISATION

80.8%

CELLULAR MOBILE
CONNECTIONS



Meltwater

15.00
MILLION

YEAR-ON-YEAR CHANGE

+0.2%
+28 THOUSAND

TOTAL vs. POPULATION

145.3%

INDIVIDUALS USING
THE INTERNET



we
are
social

8.90
MILLION

YEAR-ON-YEAR CHANGE

-0.4%
-33 THOUSAND

TOTAL vs. POPULATION

86.2%

SOCIAL MEDIA
USER IDENTITIES



7.40
MILLION

YEAR-ON-YEAR CHANGE

-1.2%
-90 THOUSAND

TOTAL vs. POPULATION

71.7%

JAN
2024

DAILY TIME SPENT WITH MEDIA

THE AVERAGE AMOUNT OF TIME EACH DAY THAT INTERNET USERS AGED 16 TO 64 SPEND WITH DIFFERENT KINDS OF MEDIA AND DEVICES



GREECE

TIME SPENT USING
THE INTERNET



GWl.

5H 48M

YEAR-ON-YEAR CHANGE
-3.0% (-10 MINS)

TIME SPENT WATCHING TELEVISION
(BROADCAST AND STREAMING)



KEPIOS

3H 07M

YEAR-ON-YEAR CHANGE
-2.5% (-4 MINS)

TIME SPENT USING
SOCIAL MEDIA



GWl.

1H 53M

YEAR-ON-YEAR CHANGE
-2.2% (-2 MINS)

TIME SPENT READING PRESS MEDIA
(ONLINE AND PHYSICAL PRINT)



1H 59M

YEAR-ON-YEAR CHANGE
+1.3% (+1 MIN)

TIME SPENT LISTENING TO
MUSIC STREAMING SERVICES



GWl.

1H 04M

YEAR-ON-YEAR CHANGE
-3.6% (-2 MINS)

TIME SPENT LISTENING
TO BROADCAST RADIO



GWl.

1H 22M

YEAR-ON-YEAR CHANGE
-9.9% (-9 MINS)

TIME SPENT LISTENING
TO PODCASTS



KEPIOS

0H 34M

YEAR-ON-YEAR CHANGE
-5.4% (-1 MIN)

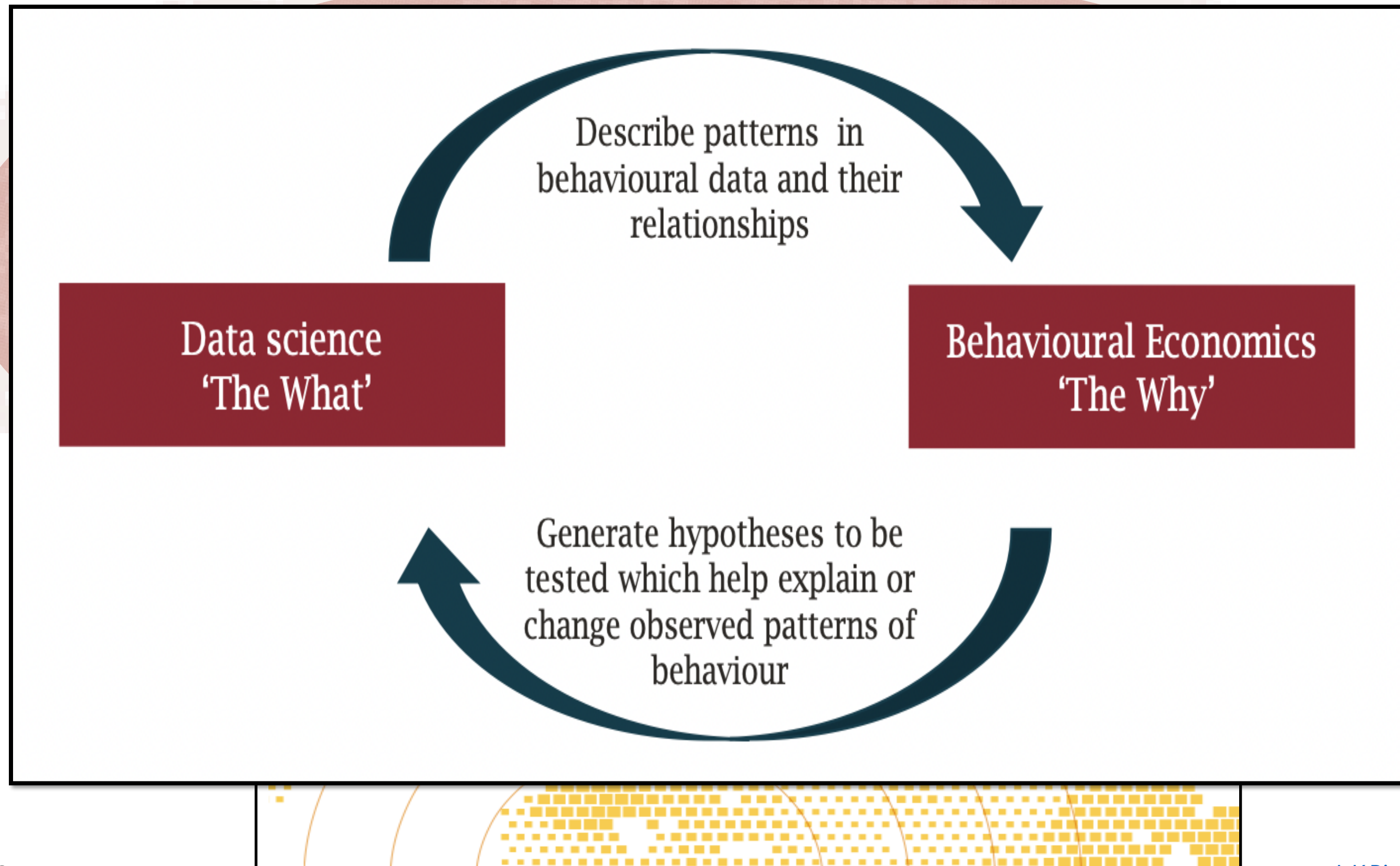
TIME SPENT USING
A GAMES CONSOLE



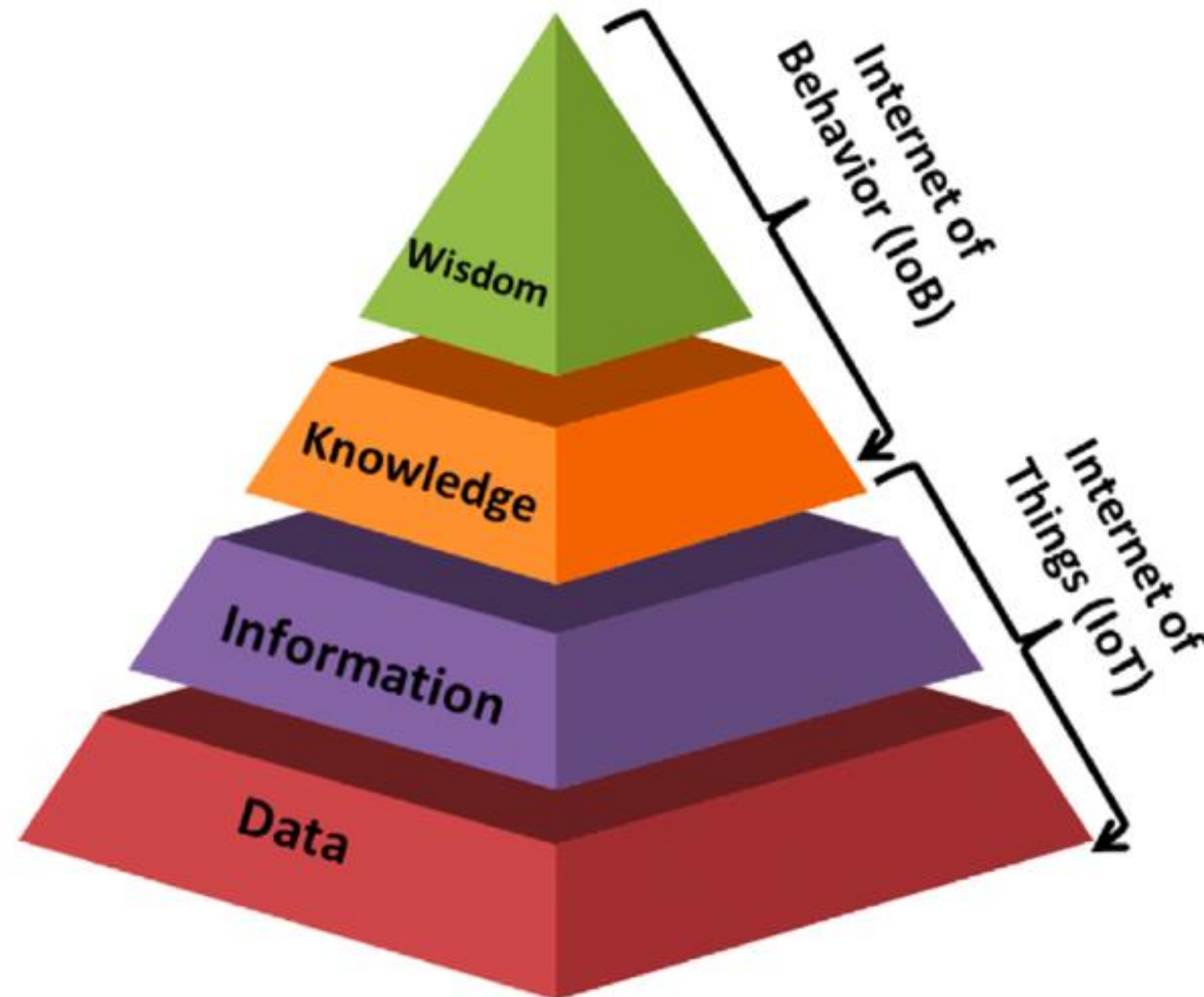
0H 47M

YEAR-ON-YEAR CHANGE
-0.2% (-<1 MIN)

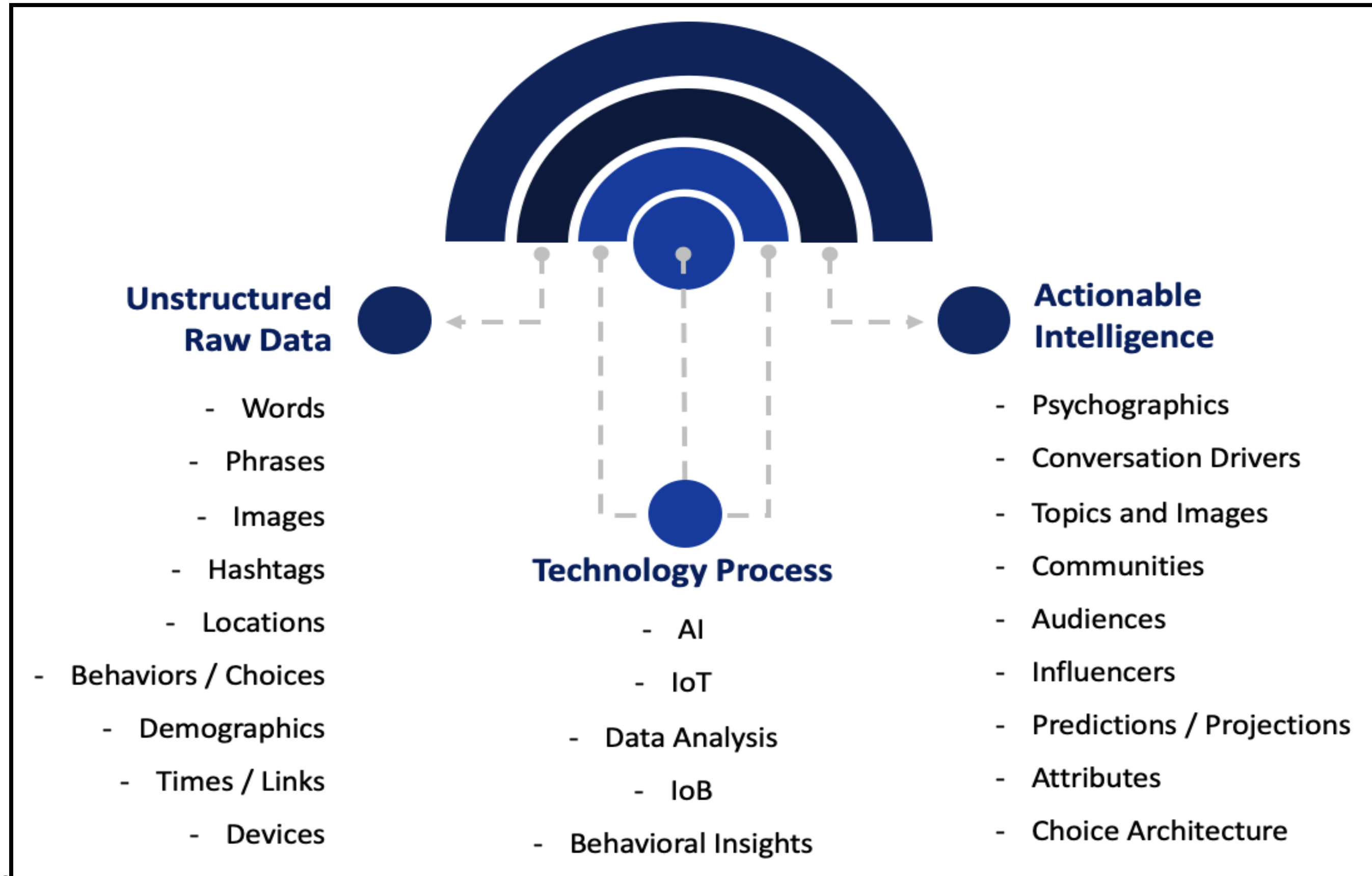
WHAT MAKES **INTELLIGENCE** A MUST-HAVE RESEARCH **TOOLKIT**?




Internet of Things (IoT) vs Internet of Behaviors (IoB)



WHAT MAKES INTELLIGENCE A MUST-HAVE RESEARCH TOOLKIT?



 **Who are**

Age

16-24

25-34

18

28

19

28

Gender

Female

Male

49

51

46

54

Living context

74

65

Urban

Income segmentation

Low

Medium

32

31

35

30

Character

Open-minded	70	56
Creative	64	46
Health-conscious	64	48
Price-conscious	58	42
Social/outgoing	54	41

Employment status

Full-time worker	38	52
Part-time worker	9	8
Self-employed/freelancer	8	11
Full-time/stay-at-home parent	2	3
Student	14	14
Unemployed	22	7
Retired	6	3



Greece %

Global average %

Future outlook

What do you think the following will enter in the next 6 months

environment

18

43

personal finances

22

53

economy of the country where you live

13

49

vacation abroad

10%

27%

if they travel for a vacation

52

28

if they travel for a vacation

31

12

if they travel for a vacation

22

11

if they travel for a vacation

21

20

if they travel for a vacation

20

22

CBI- INSIGHTS



How d

Attitudes toward soc

% who say the following descr

I worry I spend too much

I think social media is go

I am using social media le

I feel using social media c

Top 5 reasons for bei

% who say the following are r

1. Keeping in tou

2. Filling spare ti

3. Reading news

4. Finding cont

5. Finding inspiration for things

Attitudes toward social

% who say the following describe them

I worry I spend too much time on social media

29

I think social media is good for society

27

I think social media is good for society

28

I am using social media less than I used to

25

I feel using social media causes me anxiety

15

I feel using social media causes me anxiety

16

Accounts followed

Brands you purchase from

34% 23%

Brands you're considering purchasing from

31% 22%



Note that global figures in this chart exclude China.



TikTok

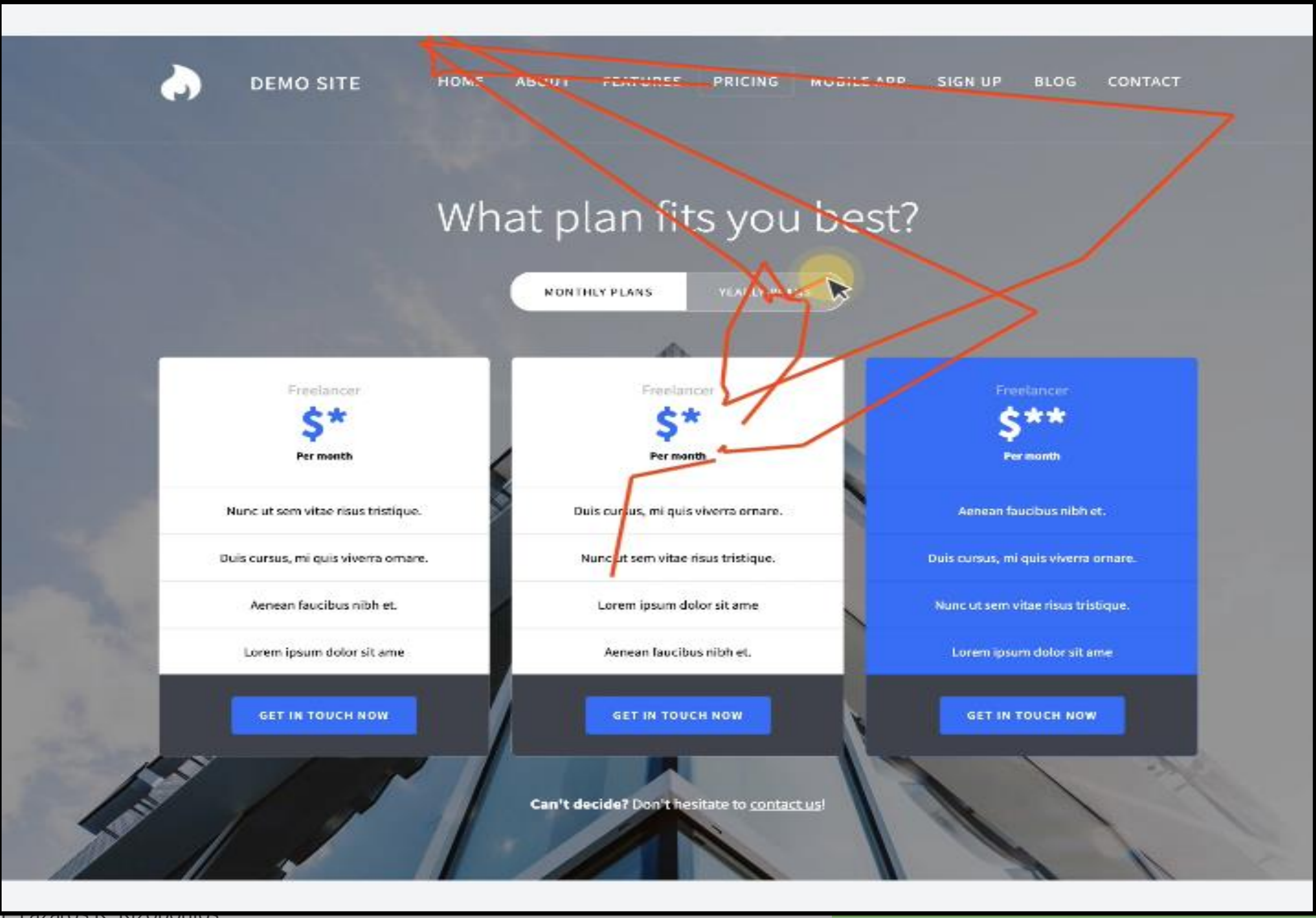
26% 11%
33% 16%



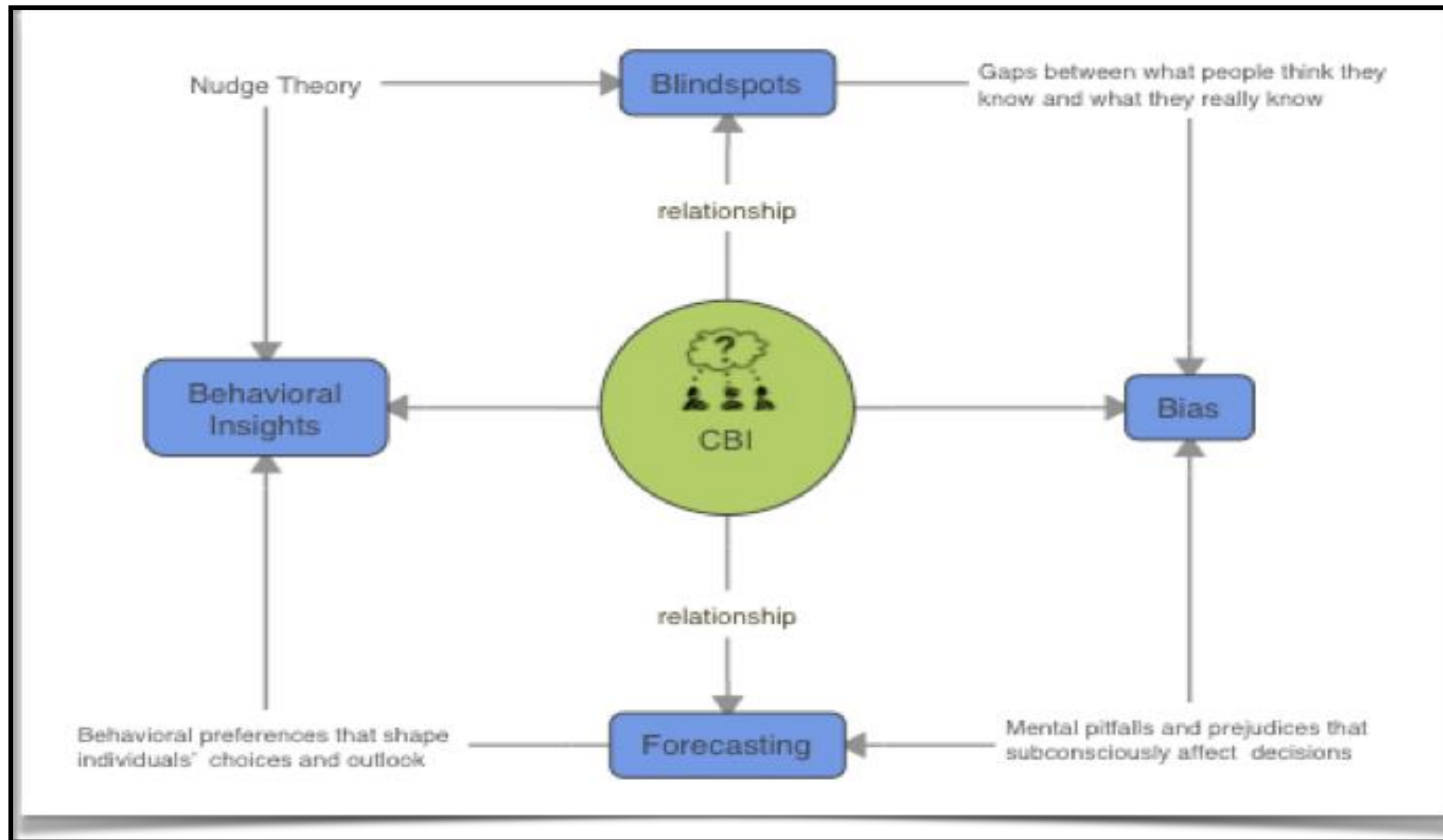
Badoo

4% 1%
4% 1%

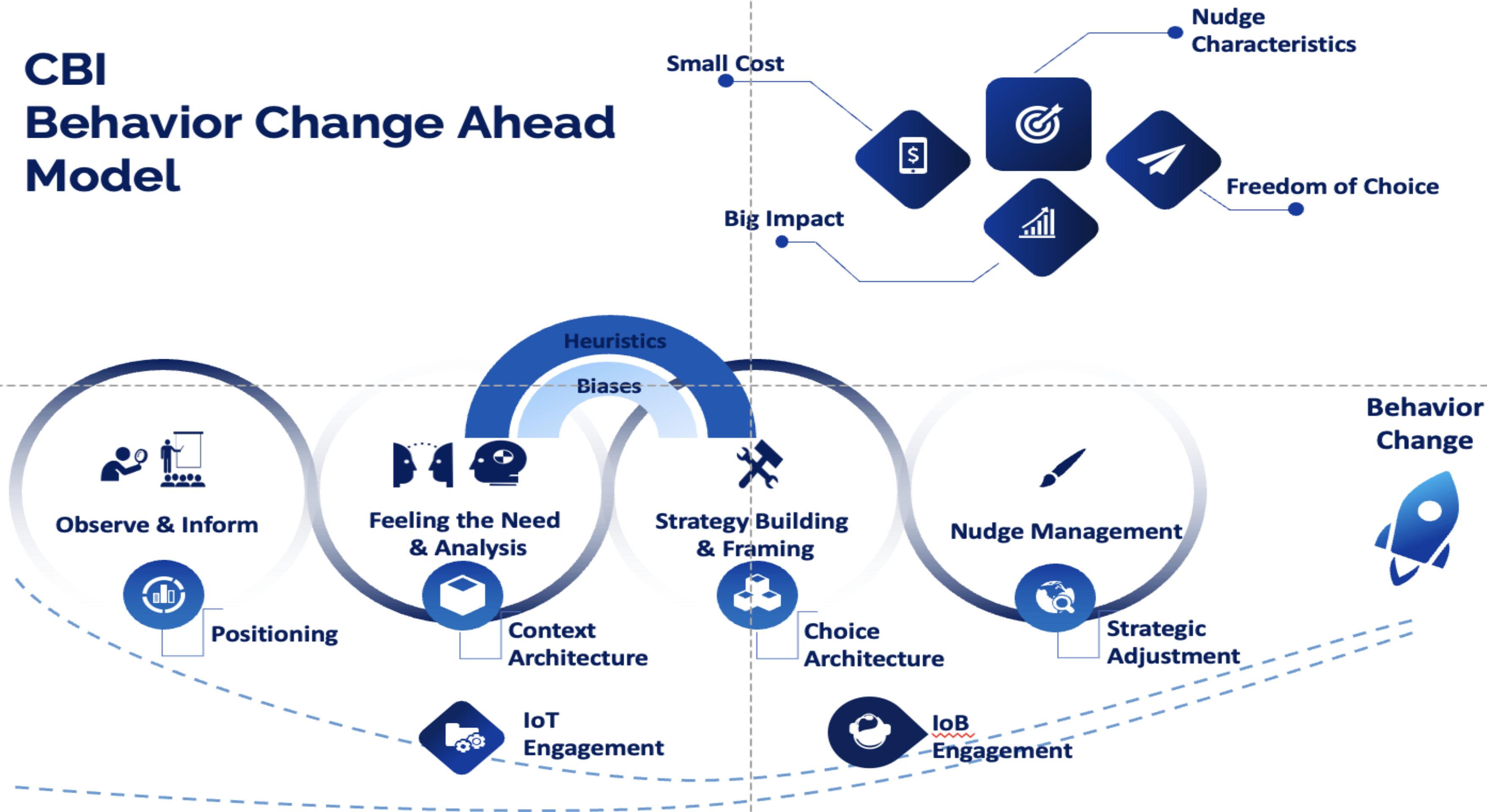
Can We Be Unknown – OBLIVION



- Cognitive Behavioral Interaction (CBI)
- Understand human behaviors, design solutions to scale messages, products, programs and policies.

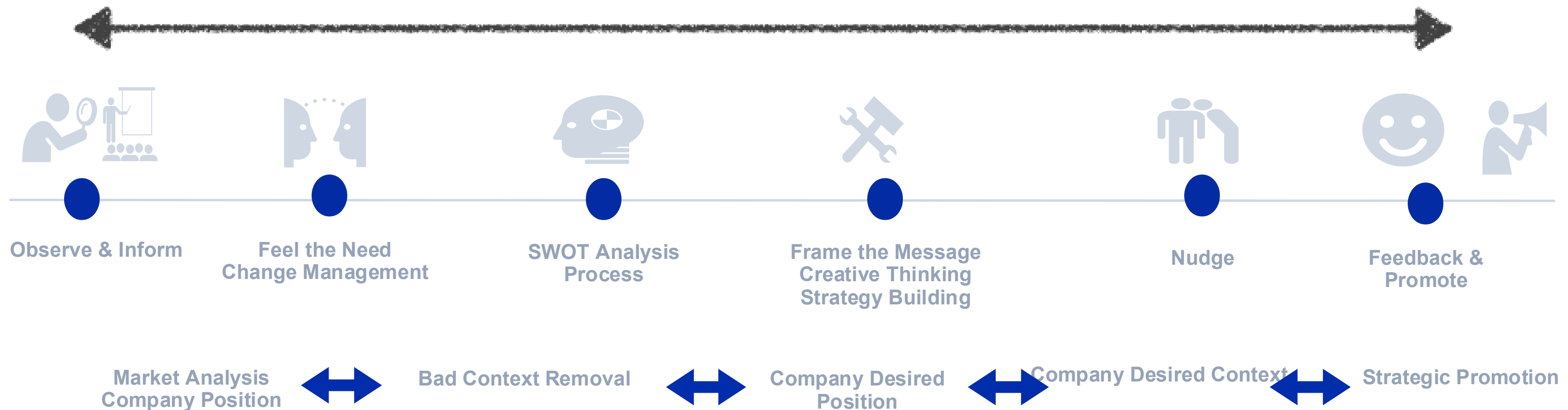


CBI Behavior Change Ahead Model



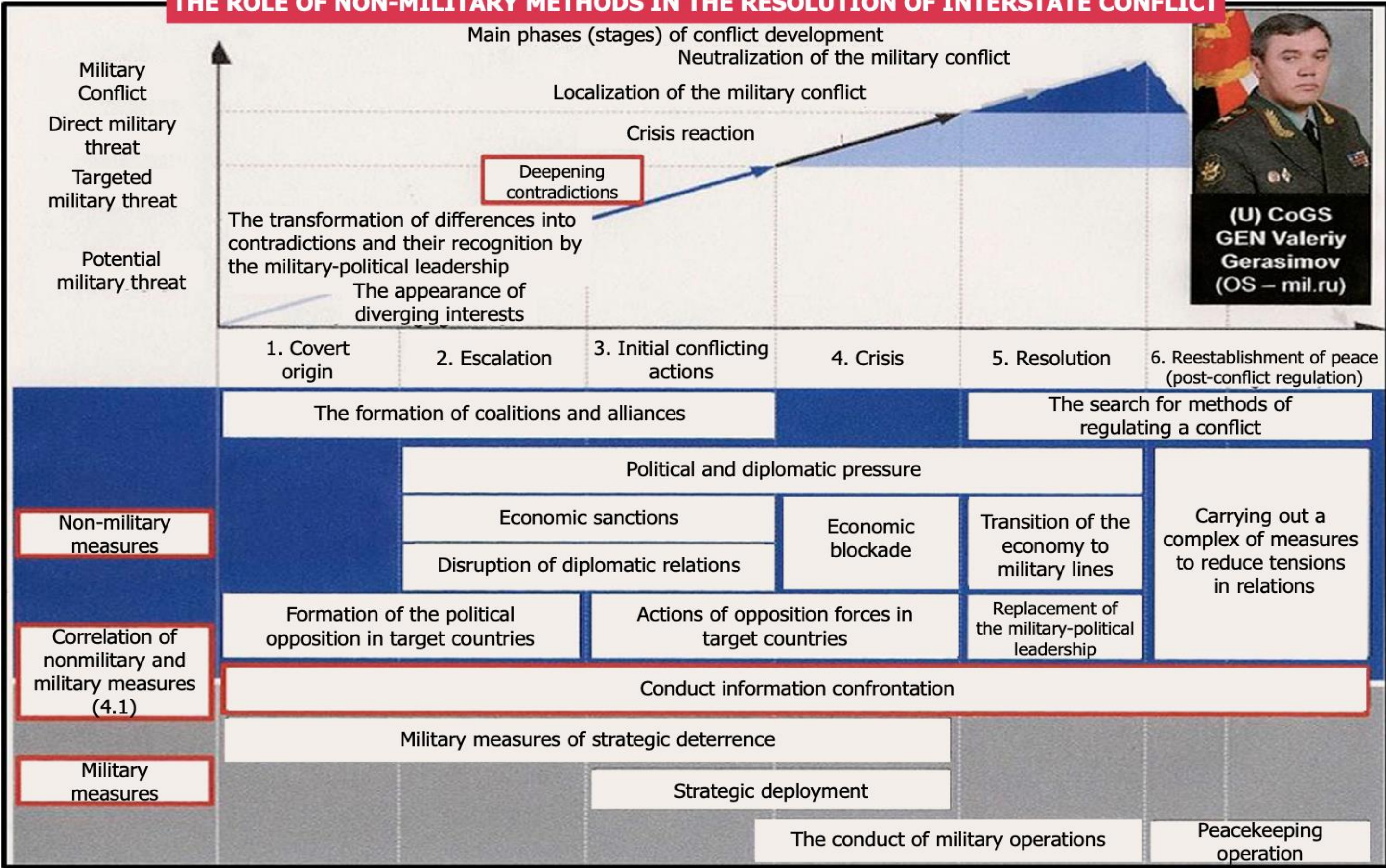
OUR “NUDGING” AHEAD

Strategic Adjustment and Agility



Context Building in collaboration with Academia and Market appropriate reports

THE ROLE OF NON-MILITARY METHODS IN THE RESOLUTION OF INTERSTATE CONFLICT



Behavioral Economics: New Era?

Classic economic model of “econs”, where people:

- Maximize expected utility.
- Update beliefs according to information.
- Selfish, without emotion, does not care of others.
- Fully rational, always calculating, decide with actuarial precision

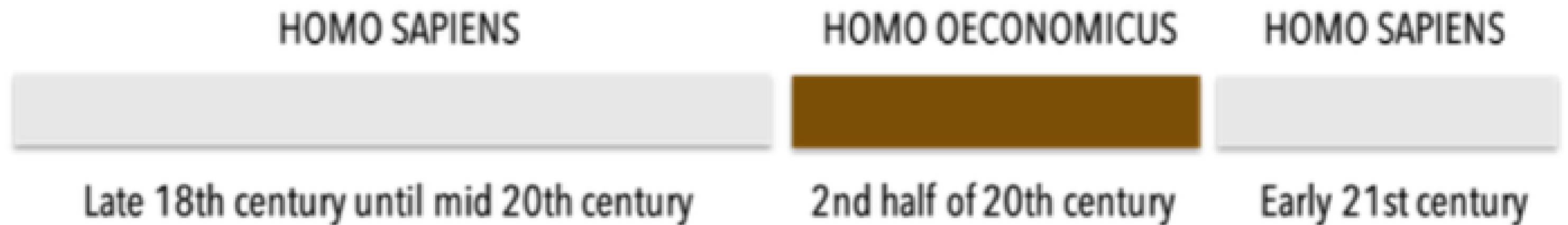


Behavioral Economics: New Era?

- People are **subject to systematic biases** that lead to errors.
- **Are these biases fixable?** Conventional focuses on *Changing the Mind*. If can be trained, better outcomes are expected.
- Requires to be “**de-biased**” through **education or training**.

Behavioral Economics: New Era?

- Do people behave like homo-economicus ?
 - If not, how do they behave?

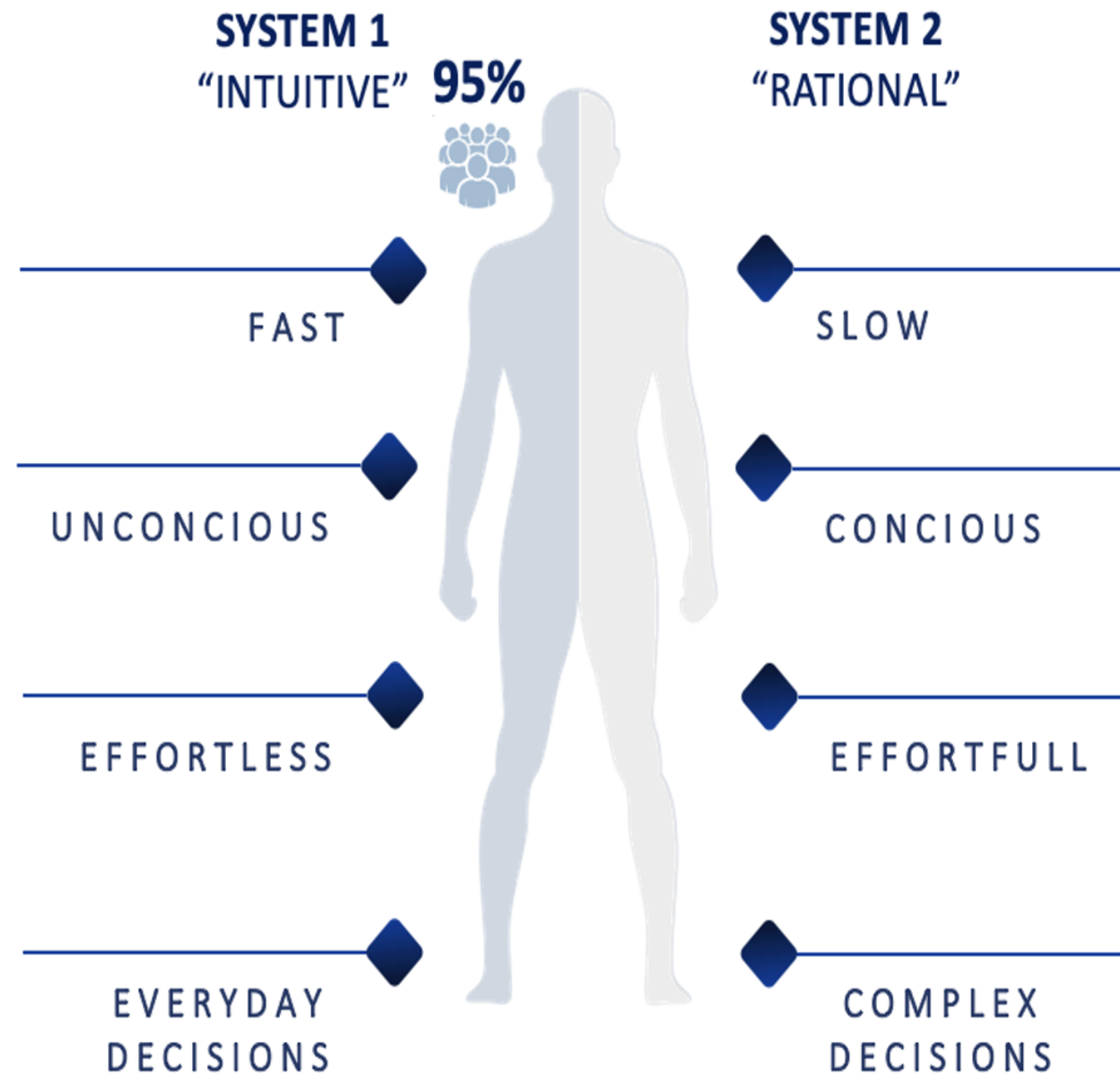


Novelty of Research

- People do not make choices in a vacuum.
- The one who creates that environment is the **choice architect**.
- Influencing behavior: IF, WHEN and HOW
- The way the resources are being allocated

Behavioral Insights: Dual System

HUMAN DECISION SYSTEMS



Behavioral Insights: Dual System

System	Reflective	Automatic
Characteristics	Controlled	Uncontrolled
	Effortful	Effortless
	Deductive	Emotional
	Slow	Fast
	Self-aware	Unconscious
Examples of use	<i>Learning a foreign language</i> <i>Planning an unfamiliar journey</i> <i>Counting calories</i>	<i>Speaking in your mother tongue</i> <i>Taking the daily commute</i> <i>Desiring cake</i>

Behavioral Insights: Dual System

Two systems / different capabilities:

- **Rational:** limited capacity, systematic and “deeper” analysis.
- **Automatic:** many things separately/unconsciously, short-cuts and biases.

Reading a book, we ignore surroundings – **but** if someone calls our name, we break off.

Two Different Species?

Human Beings In
Traditional Economics



Human Beings in
Behavioral Economics.



When anticipating outcomes,
**the pain associated with losing weighs more heavily on us than
the potential pleasure of winning.**



Hamburger
“90% Fat Free”

VS.

“10% Fat”

Which Do You Want to Eat?

July '08 NBC News/Wall Street Journal poll:

Who would be the **riskier** choice for president?

Barack Obama

55%

John McCain

35%

Who would be the **safer** choice for president?

Barack Obama

41%

John McCain

46%

Cognitive Biases and Heuristics

Prospect Theory (Daniel Kahneman & Amos Tversky)

- **Loss Aversion:** People tend to prefer avoiding losses rather than acquiring equivalent gains. The pain of losing is psychologically twice as powerful as the pleasure of gaining.
- **Framing Effect:** Decisions are influenced by how choices are presented. People react differently to the same outcome depending on whether it's framed as a gain or a loss.



Cognitive Biases and Heuristics

Heuristics and Biases



Anchoring Bias

People rely too heavily on the first piece of information they encounter, known as the anchor, even if it's irrelevant to the decision at hand.



Availability Heuristic

Decisions are often based on immediate examples that come to mind, which may not accurately represent reality but shape risk perception.

Cognitive Biases and Heuristics

Status Quo Bias

- **Resistance to Change:** Individuals tend to prefer things to remain the same by default, avoiding change even when it could be beneficial.
- **Impact on Economic Decisions:** Status quo bias leads to inertia in decision-making, affecting everything from retirement savings to policy adoption.



Cognitive Biases and Heuristics

Endowment Effect

- **Valuing Possessions More Once Owned:** The Endowment Effect is the tendency for people to place higher value on items they own compared to identical items they do not own.
- **Implications for Consumer Behavior:** This effect explains why individuals are reluctant to part with their possessions, even when selling them would be economically beneficial.



Cognitive Biases and Heuristics

Default Bias

- **Power of Defaults:** People tend to stick with default options, leading to inertia in decision-making, even when better alternatives exist.
- **Case Studies in Policy:** Default bias explains the success of automatic enrollment in pension plans and opt-out organ donation policies.



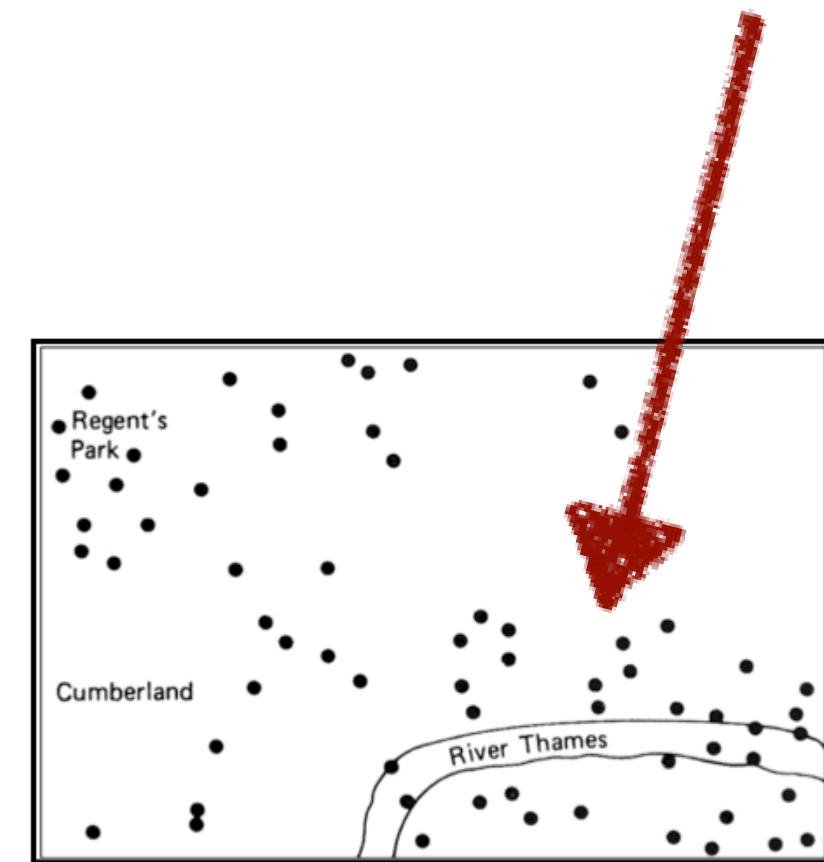
Cognitive Biases and Heuristics

Availability Heuristic

Judgments on the likelihood of an event based on how easily an instance comes to mind (9/11 - death from terrorism correlation)

Adjustment and Anchoring Heuristic

Initial exposure to a number serves as a reference point and influences subsequent judgments.



Συγκεντρώσεις των Σημείων Βομβαρδισμού στο Κεντρικό Λονδίνο (Gilovich, 1991)

Wins and Losses & Loss Aversion

Associated with **prospect theory**. The pain of losing is about twice as powerful as the pleasure of gaining.



Status Quo

Prefer to stay the same by doing nothing (**inertia**) or by sticking with a previously decision. Even when small costs are involved and the importance is great.

Is this true?



Authority Bias

Leadership over rules

Halo Effect



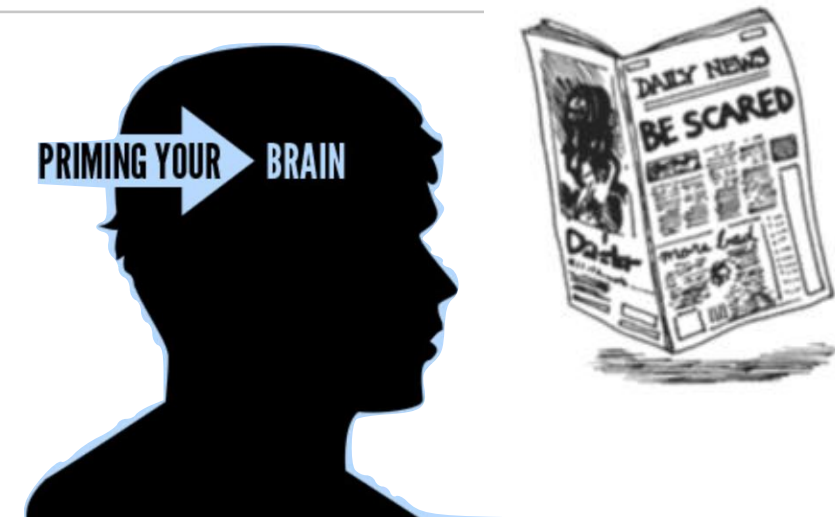
A friendly figure may be considered to have a nice physical appearance, whereas a cold one may be evaluated as less appealing



CAN YOU
TRUST YOUR
INSTINCTS?

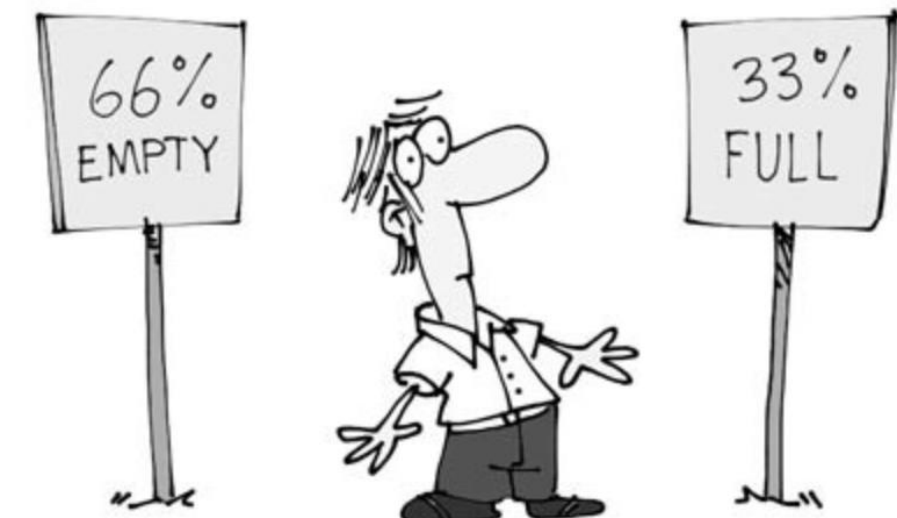
Priming Effect

Engages people in a task or exposes them to stimuli. The prime consists of meanings (words) that activate associated memories (schema, stereotypes, attitudes, etc.)



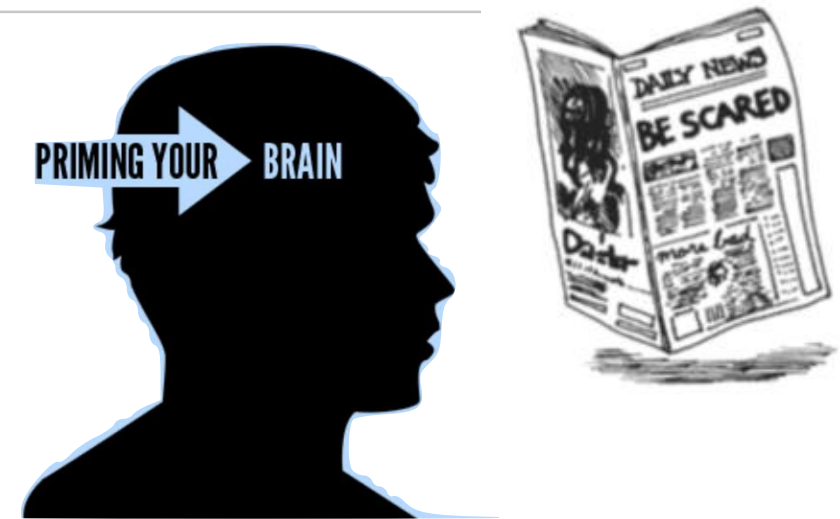
Framing Effect

Choices can be presented in a way that highlights the positive or negative aspects of the same decision.

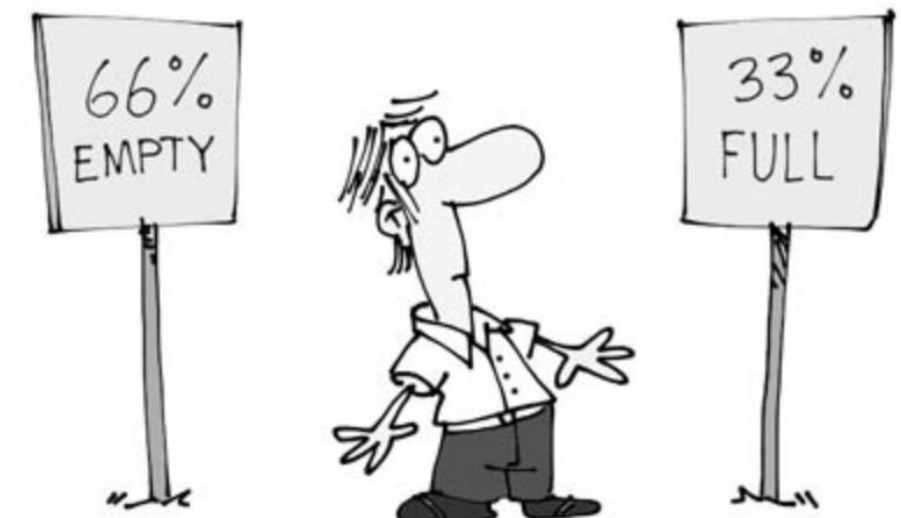


Cognitive Flexibility

→ Skill to switch between different concepts, or to adapt behavior to achieve goals in a novel or changing environment



→ Learning to learn and being flexible on the way you learn. Includes changing strategies for optimal decision-making.



Judgement Under Uncertainty

- Rely on how people **view losses**
- If we **win \$10**, we are as **happy** as **upset**, if we have **lost \$10**.
- Is this a true fact?
- Do you accept to toss the coin for \$100 bet?

Judgement Under Uncertainty

- Most people would answer NO, though they should be indifferent to the outcome: 50 percent chance of winning.
- **People are loss averse: They hate losses twice as much as they enjoy gains.**

Judgement Under Uncertainty

- Another coin-toss example to show us our natural tendency to avoid losses. Which is preferred?
 - ❖ Scenario A: 50% to win \$1,000 and a 50% to win nothing
 - ❖ Scenario B: \$450 payout

Judgement Under Uncertainty

❖ Scenario A: 50 % to win \$1,000 and a 50 % to win nothing

❖ Scenario B: a definite \$450 payout

- Most choose the \$450 payout, even though, the coin toss is a better bet (expected value of \$500)

“Nudges”

"A nudge, 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..."



Leadership
is not about size,
it's about
Knowledge & Wisdom

Nudge Theory (Richard Thaler)



Concept of Nudges

Nudges are subtle interventions that guide people's decisions without restricting their choices, promoting better outcomes while maintaining freedom of choice.



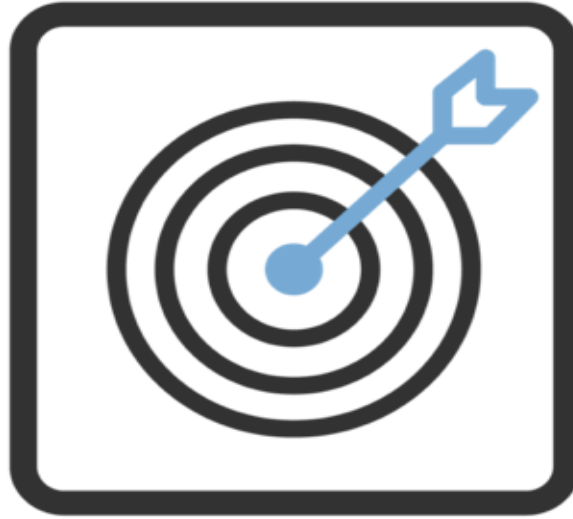
Examples of Effective Nudges

Nudges are used in public policy, such as automatic enrollment in pension plans, default options for organ donation, and health-related reminders.

“Nudges”

Nudges are about **Designing Choices** to try to help people make choices in a more simple way.

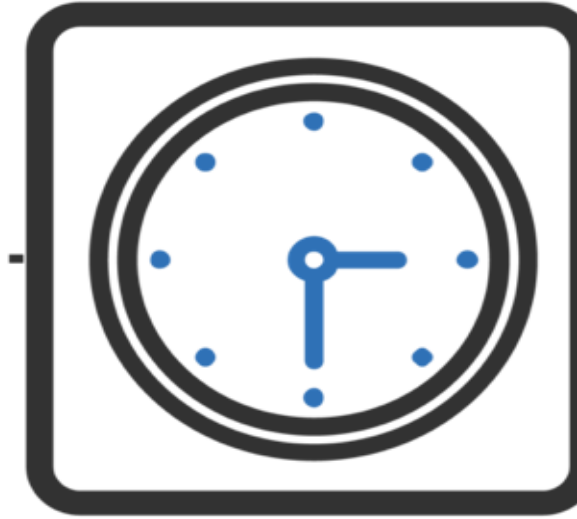
INTENTION



People have perfect
willpower and focus to
follow-through

VS.

ACTION



People are fairly
shortsighted and likely
to procrastinate.

INTENTION



People can calculate
cost and benefits.

VS.

ACTION



People have limited
attention spans and
memory.

Why Behavioral Insights

- Better decisions by engineering choice contexts: engaging a bias in order to overcome a more damaging.
- Decisions are often easier to change. **“Go with the grain”** of human nature.
- The same errors that cause stumble can lead to better choices.

Why Behavioral Insights

- Changing the mind, has been the primary approach. **Insufficient. Deals with our slow, conscious system 2.**
- Rapid system 1 provides the lens through which we **understand the strategic problem** (e.g., responding to the threats), **focus our attention** (e.g., risks, opportunities?), and **generate the “gut intuitions”**.

BEHAVIOURAL ECONOMICS

Traditional economics views humans as robotic machines who make calculated decisions based on logic. In contrast, behavioural economics views humans as irrational and emotional beings who are influenced by biases and experience when making decisions. Traditional economics is the theory; behavioural economics is the reality.



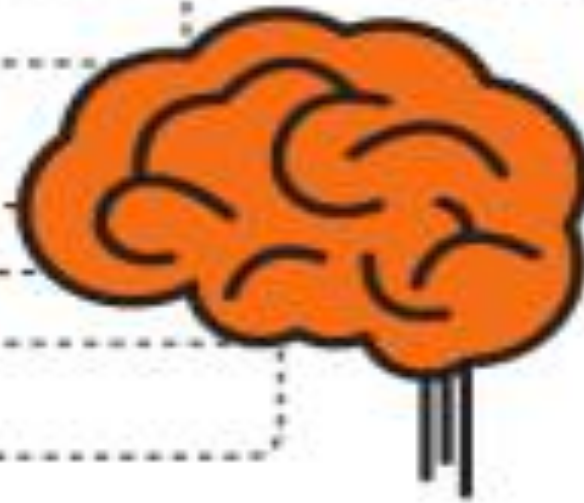
THE NEUROSCIENCE

Decision making is a mixture of both system 1 and system 2 thinking – it can be considered as a continuum rather than a discrete choice between systems.

'SYSTEM 2' THINKING

Calculating
Conscious
Slow
Infrequent
Effortful
Logical

Left vs Right



'SYSTEM 1' THINKING

Automatic
Fast
Subconscious
Stereotypic
Emotional
Frequent

B2B DECISION MAKING IS EMOTIONAL

90% of buyers will buy from one the brands they very first thought of (usually between 1-3).

B2B customers feel less safe and need more reassurance. We often see softer, relationship factors as the strongest drivers of satisfaction/loyalty.



BEHAVIOURAL ECONOMICS IN ACTION

Loss Aversion & Endowment



- It is often hard to convince companies to change suppliers because they trust the devil they know rather than the devil they don't know. This is called **"loss aversion"**.
- People will pay more for a product they know than a product they don't know. This is called **"endowment"**.

Cognitive Framing

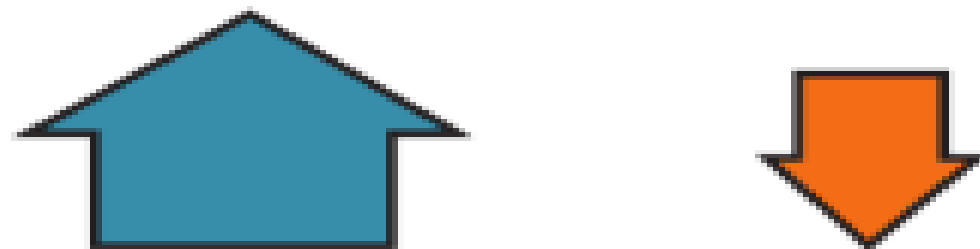
The way that information is presented can effect our interpretation of that information.



- Caution should be taken when framing questions so that respondents aren't led in their answers.
- Messages should be clear and major on big benefits - playing on positive and impressive stories.

Status Quo Bias

People love their comfort zone and are unwilling to move outside it without a significant incentive for doing so. They need to be persuaded that the gains of a change will far outweigh the potential losses.

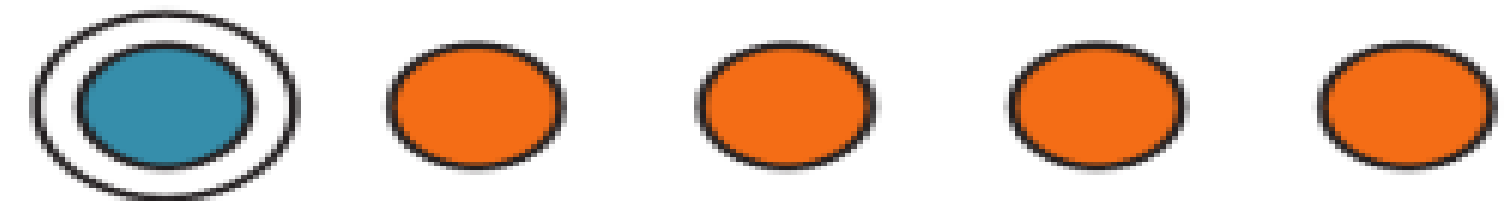


- The study of past behaviour is much more reliable than asking hypothetical questions about future intentions
- Suppliers have to provide a significant incentive to encourage switching while at the same time reassuring customers they can match their current offer.

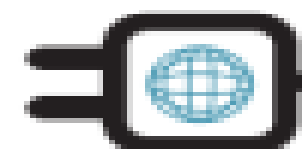
Anchoring & Semmelweis Reflex

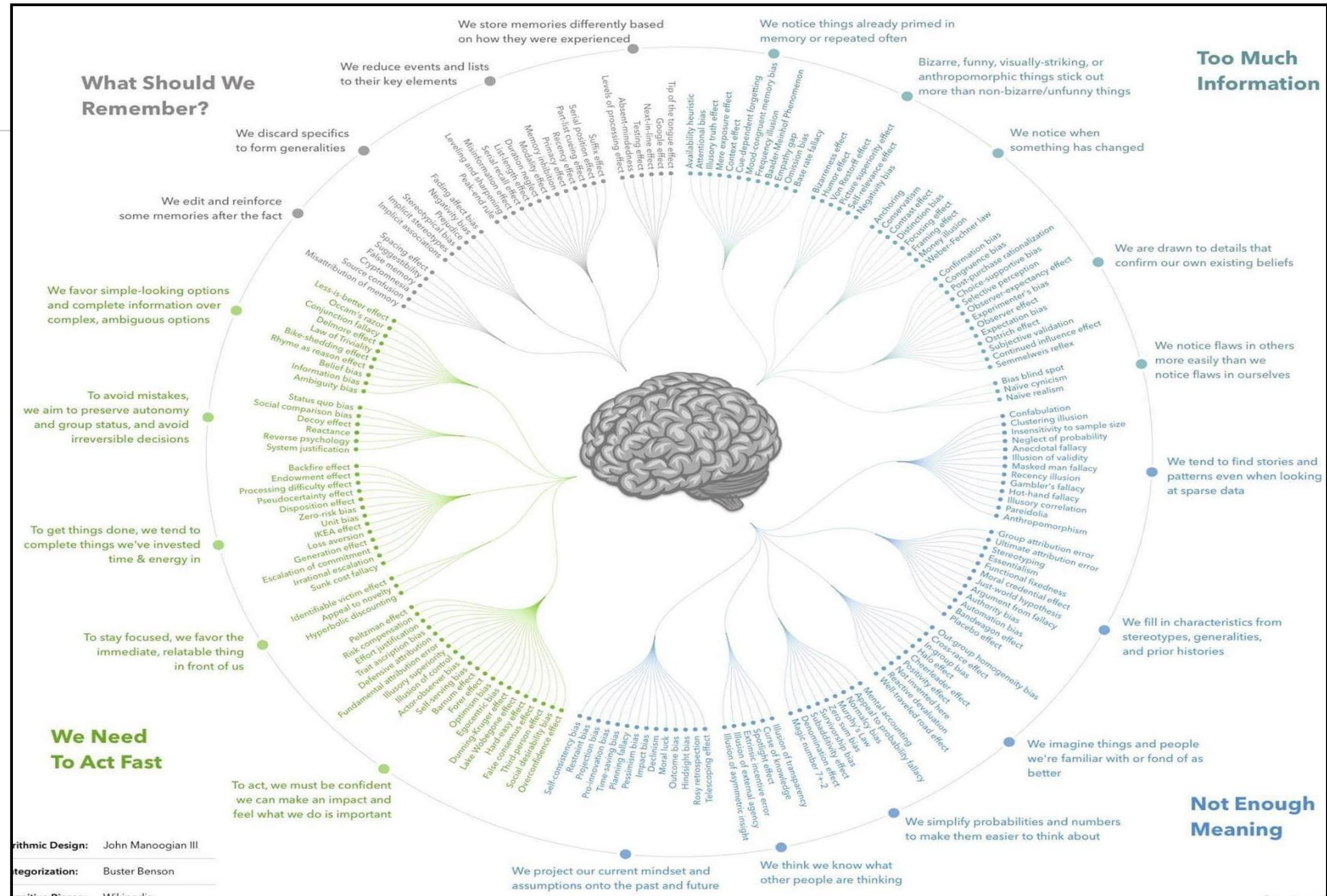
Anchoring: To rely on the first piece of information you receive on a subject.

Semmelweis Reflex: The tendency to reject new evidence that contradicts a paradigm.



- Be aware that any pre-codes that are offered as potential answers will bias the results as they provide ready made **"anchors"**.
- Look for "nuggets of gold" in information as this could be the small dot on the radar screen that eventually becomes much bigger.





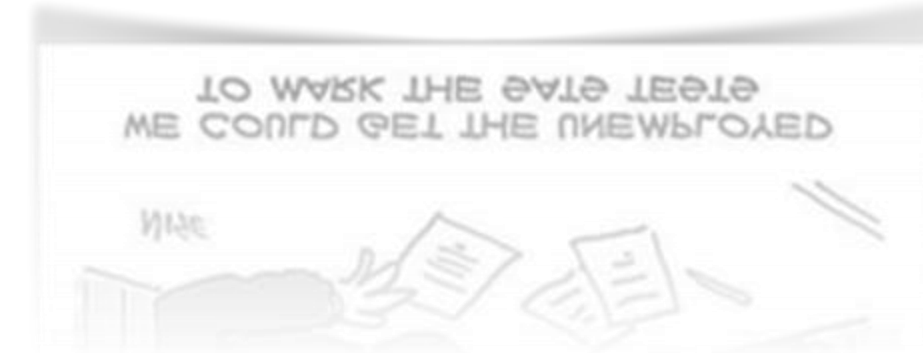
Ultimatum game

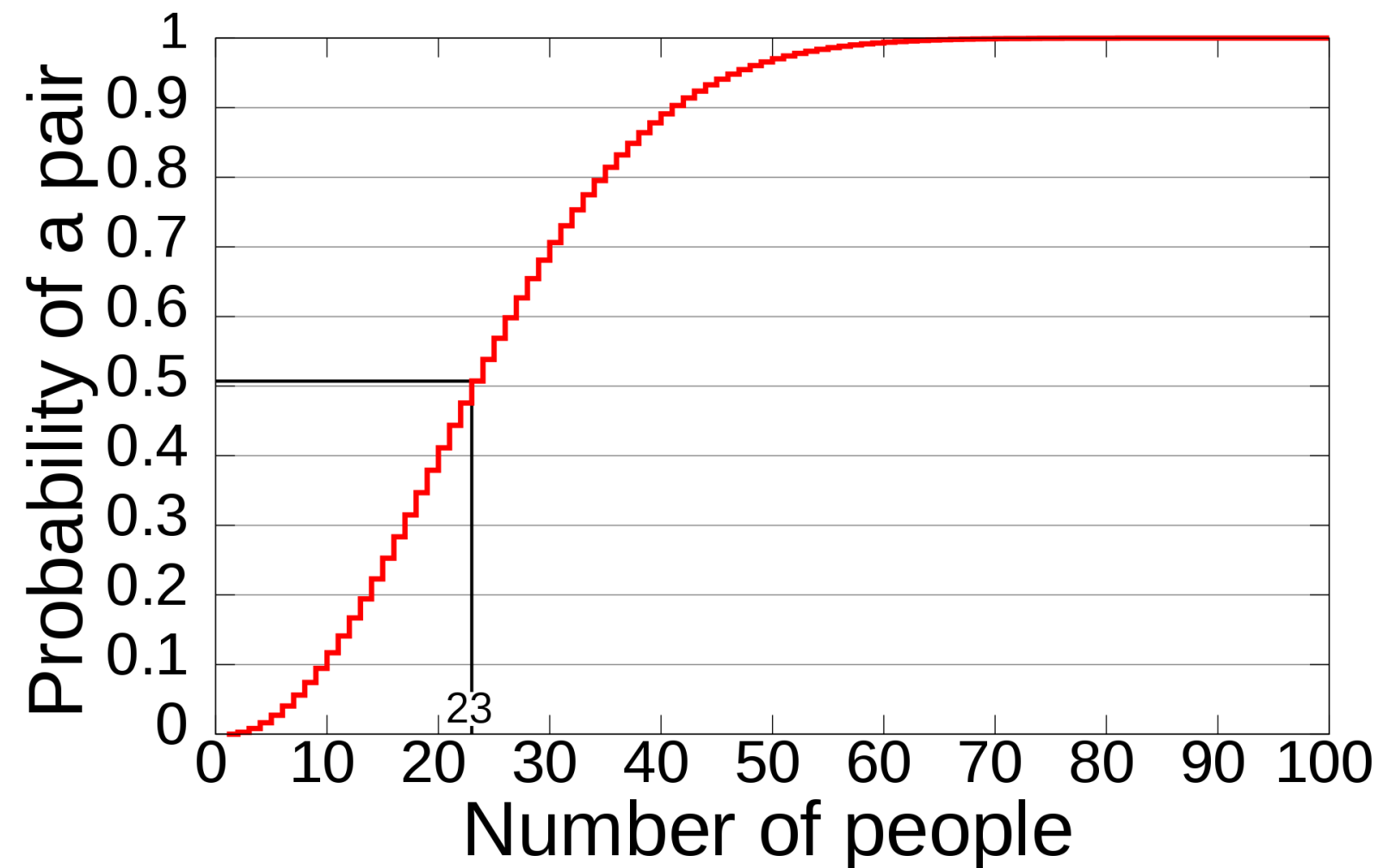
- The mean offer is 30-40%.
- Half offers below 20% are rejected.
- High stakes, reputation and anonymity have no effect.
- Demographic variables have weak effect.



Dictator game:

- 60% of people offer money.
- The mean amount is around 20%.
- The amount given is less than in the ultimatum game but still positive. This is despite there is no threat of rejection.





probability of four responses followed by one failure: $0.8^4 * 0.2$. But this is only one possibility. The failure could be the first patient, or the second, etc. for a total of five possibilities. So we need to multiply the preliminary probability by 5. The result is this $5 * 0.8^4 * 0.2 = 0.4096$, which I rounded up to 0.41.

$$(1.00)^{365} = 1.00$$

$$(1.01)^{365} = 37.7$$

Doing nothing at all
Vs.

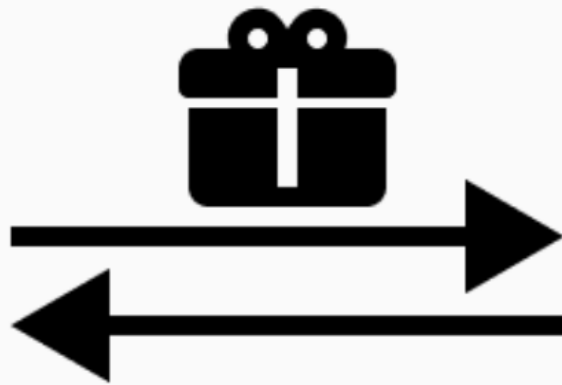
Small consistent effort

“Scale Behavior Change - Influence”

- The influence of individual decisions by external factors is highlighted by the science of persuasion (influence science)
- Rationality is limited by the existence of automatic reactions
- Such automatic reactions are caused by six principles of persuasion (fixed action patterns)

“Scale Behavior Change - Influence”

RECIPROCITY



CONSISTENCY



SOCIAL PROOF



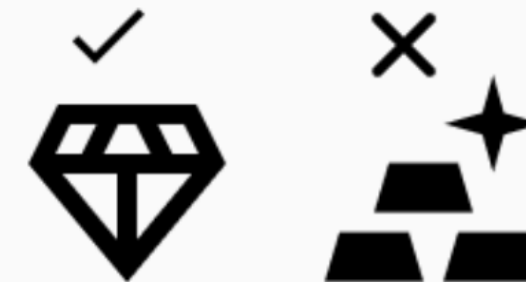
LIKING



AUTHORITY



SCARCITY



Principle	Description	Application for L&D Professionals
Reciprocity	People feel obligated to repay, in kind, what has been given to them	Give what you want to receive, lend help to a colleague and you'll get his help back later
Scarcity	People typically overvalue things that are rare, dwindling in availability or difficult to acquire	Use exclusive information and potential losses to persuade others during your presentations
Authority	People are more easily persuaded by individuals perceived to be legitimate authorities	Don't assume your expertise is self-evident, establish it first in prior informal conversations or ideally have someone else introduce you
Consistency	People feel strong pressure to be consistent within their own words and actions	Make others' commitments real by asking for owned, actionable and <u>publicly-declared</u> commitments
Social Proof	People often look to the behaviour of similar others for direction about choices	Use peer power of lots of similar others to influence and persuade
Liking	People prefer to say yes to those they like	Influence others by pointing out how you are similar to them. Charm and disarm by offering genuine praise

“Scale Behavior Change - Propaganda”

To shape opinion and behavior:

- In manipulative ways
- Exploits psychological and social dynamics

“Propaganda – Principles (sum)”

1. Avoid abstract ideas : Appeal to emotions
2. Constantly repeat just a few ideas: Use stereotyped phrases
3. Give only one side of the argument
4. Continuously criticize your opponents
5. Pick out one special enemy for **vilification**

“Propaganda – Principles (detail)”

- **The Big Lie**
Tell a colossal lie
No one would believe that someone could have the impudence to distort the truth so brazenly
- **Repetition**
Repeated exposure to a message makes it more likely to be accepted
The more a message is repeated, the more it becomes ingrained in the public's mind.
- **Appeal to emotions**
Use fear, anger, pride, or other emotions to sway opinion
Do not use logical reasoning or evidence

“Propaganda – Principles (detail)”

- **Simplification**
Simplify complex ideas and reduce them to clear and easily digestible messages
Pit “good” versus “evil”
- **Name Calling**
Label opponents with negative terms
Dehumanize them
Make them easier to dismiss or vilify
- **Glittering Generalities**
Use vague, positive-sounding phrases or slogans
“Freedom” “Honor” “Patriotism”
Evoke approval without providing real substance

“Propaganda – Principles (detail)”

- **Transfer**
Associate the propaganda with symbols or images that evoke strong emotions

“Flags” “Anthems”
- **Testimonial**
Use endorsements from famous or authoritative figures
Gives credibility to the message, even if the person isn’t an expert on the subject
- **Bandwagon**
Convince people that “Everyone is doing it”
A particular point of view is widely accepted/ Encourage conformity

“Propaganda – Principles (detail)”

- **Card Stacking**
One side of argument / Cherry Pick Facts / make it stronger
- **Plain folks**
Convince the audience that the propagandist's views reflect the concerns and interests of common, everyday people
- **Fear Appeal**
Instil fear by emphasizing threats, either real or imagined
Manipulate people into supporting a particular course of action

“Propaganda – Principles”

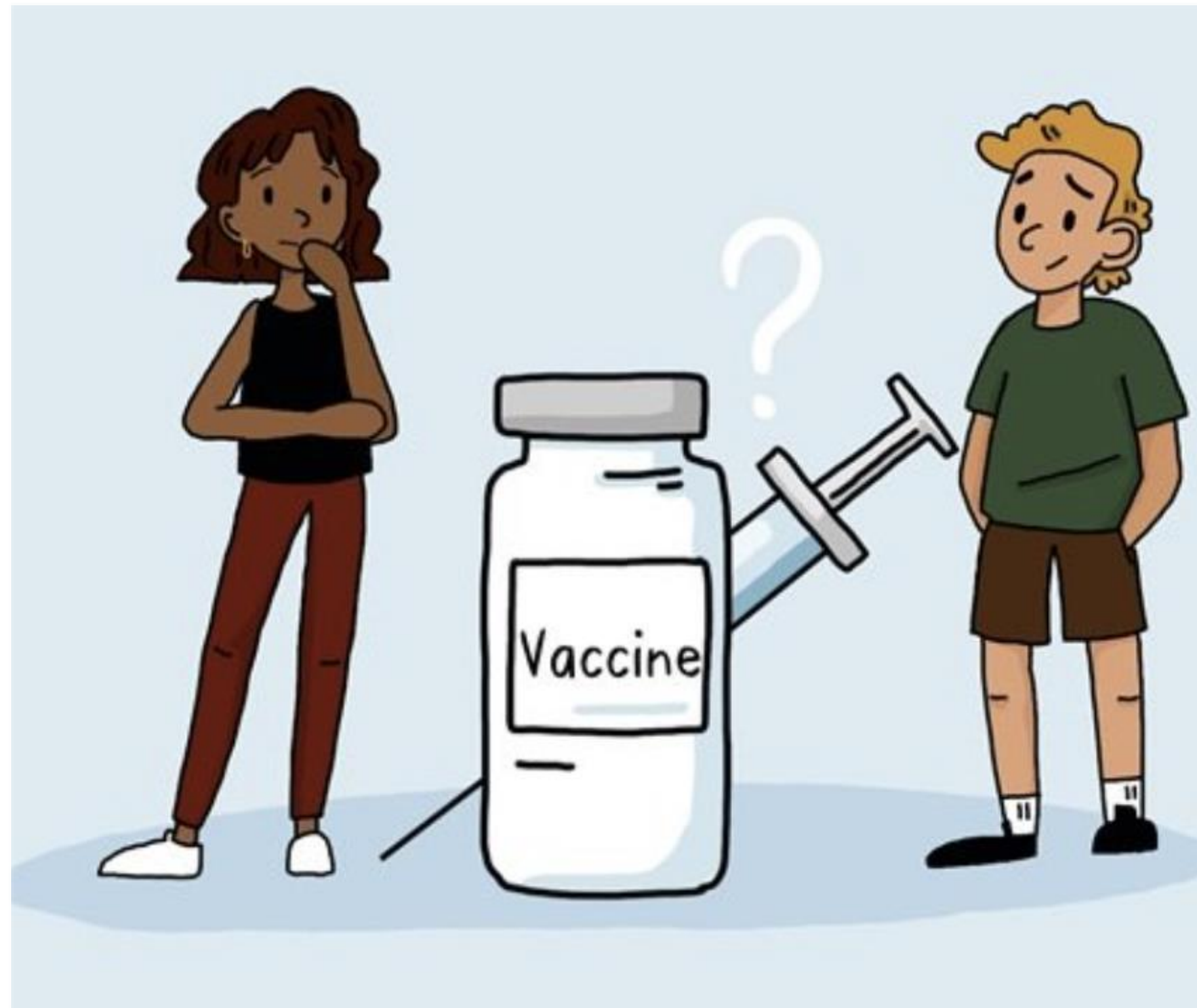
To be perceived, must

- Evoke the interest of an audience
- Be transmitted through an attention-getting medium
- **Black over white propaganda**
- **Facilitated by leaders with prestige**
- **Carefully timed**
- Reach the audience ahead of competing propaganda

“Propaganda – Principles”

- A propaganda theme must be repeated, but not beyond
- **Label events and people with distinctive phrases or slogans**
-
- Evoke responses which the audience previously possesses/easily learned
- Utilized again and again, But in appropriate situations
- Must prevent the raising of false hopes, can be blasted by future
- Must create an optimum anxiety level

WHO Guide/ How to talk about vaccines



How to have conversations about vaccination



2.

Ask open-ended questions

To help you understand their concerns



Could you tell me more
about why you feel that
way?



3.

Share trusted information

Visit the WHO website or chat to your doctor or nurse to find answers to common questions

How do we know the vaccines are safe?

They've been thoroughly tested and reviewed. If you're interested, I know where we can find more information.



4.

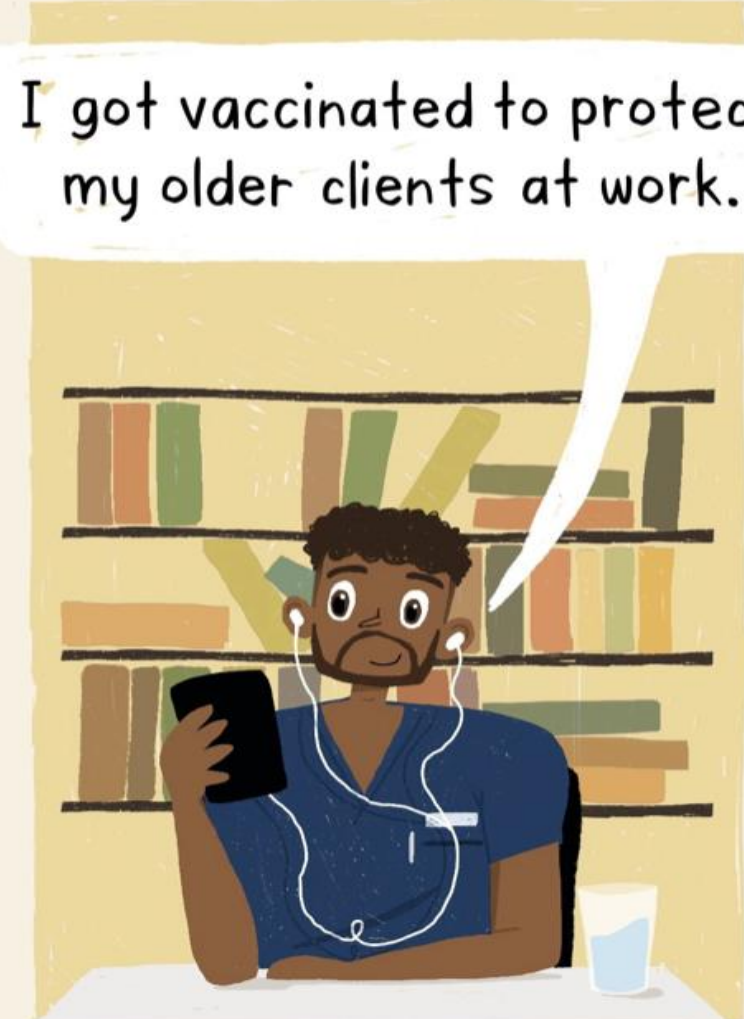
Explore reasons for wanting to get vaccinated

Share your motivations and what helped you overcome any concerns.

I want to get vaccinated so I can visit my parents again. What about you?



I got vaccinated to protect my older clients at work.



Boost vaccine confidence

- **Lead by example. Build trust.**
- Break down barriers.
- Conversations go a long way in vaccine confidence. Refer them to someone they trust.
- Their concerns can be emotional due to experiences and perceptions of poor or unfair treatment in the past.
- Don't overwhelm with facts and information. Acknowledge them and speak to their motivations.

Novelty of Research: Defaults

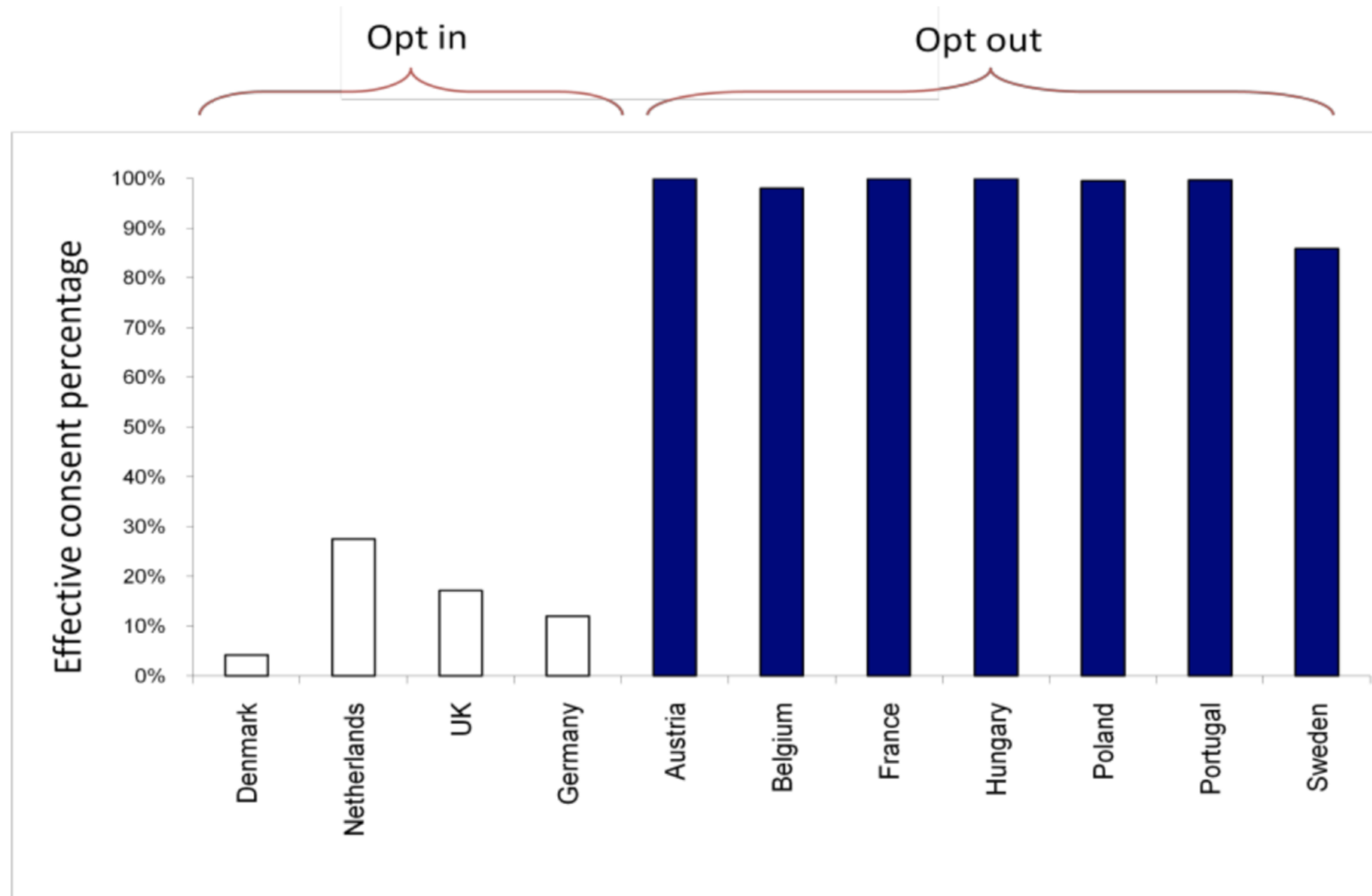


Figure 2: Comparison of organ donation registration in opt-in and opt-out systems⁵

Novelty of Research: Salience

- Our attention is drawn to what is **novel** and **relevant**. We unconsciously filter out information.
- **Novelty** (messages in flashing lights), **accessible** (items on sale next to checkouts) and **simple** (a snappy slogan).
- **Simplicity**. Attention to what we can understand – easily “encode”.
- Directly related to personal experiences, than in general/abstract way.

Priming

- Our acts influenced by **sub-conscious cues**.
- Behavior may be altered if exposed to certain **sights, words or sensations**, if “**primed**” by certain cues before-hand.
- Priming acts out of conscious, which differs from memory.
 - ❖ Words
 - ❖ Smells
 - ❖ Sights

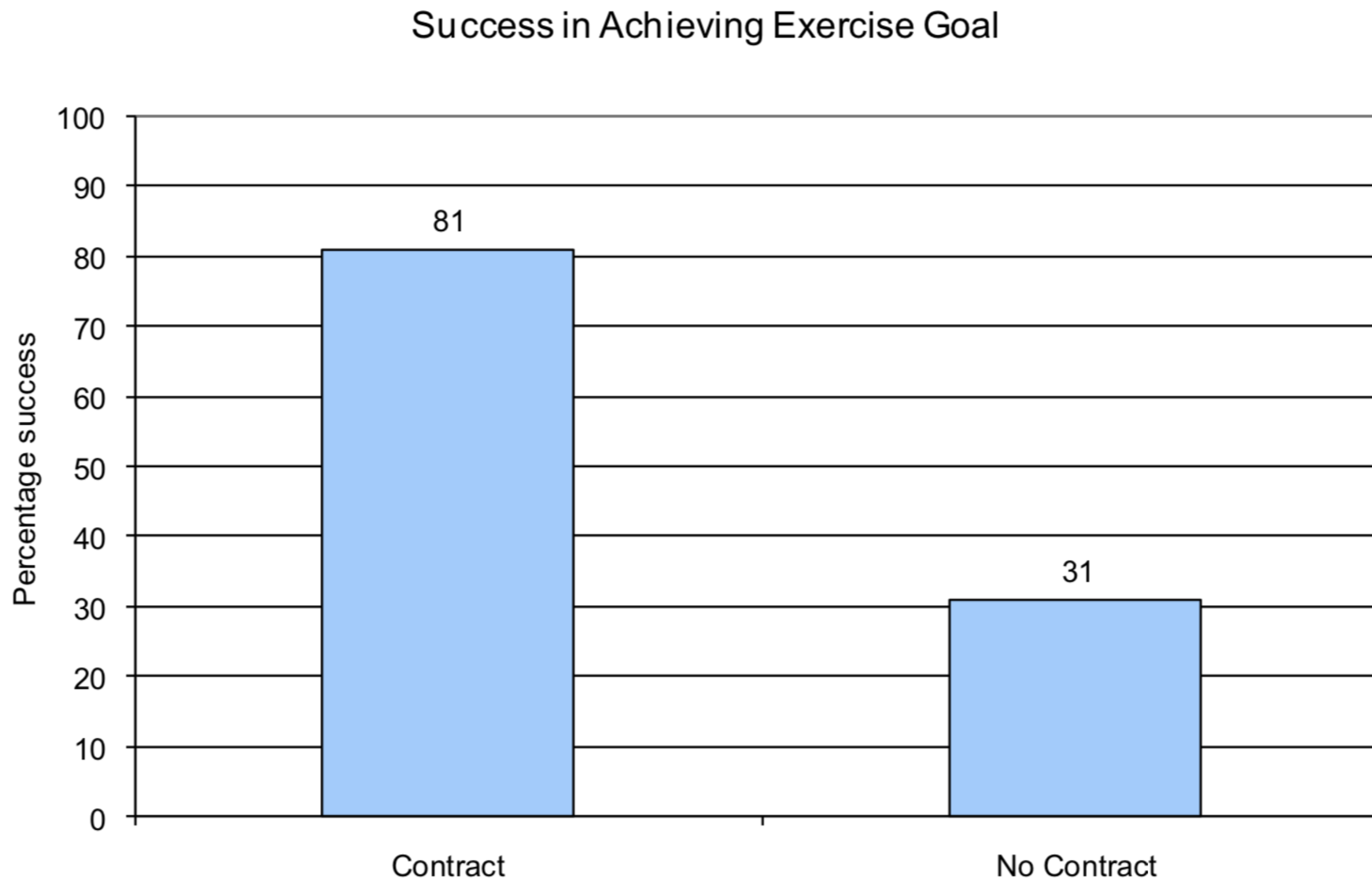
Affect

- **Emotional associations** can shape our actions. A powerful force.
- **Good mood leads unrealistically optimistic judgements,**
- All perceptions contain emotion. “We do not just see a house: we see an ugly house, or a pretentious house”. We see our **HOME**.

Commitment

- Consistent with our public **promises** and **reciprocate** acts.
- **Procrastinate** decisions in our **long-term** interests.
- When aware of will-power weaknesses (overspend, overeat or smoking), use **commitments** to long-term goals.
- Commitments are effective as the **failure cost** increase (reputation).

Novelty of Research: Commitment



Ego

- We act in ways that make us feel better.
- We behave so as to support positive self-image.
- When things go well, we attribute it to ourselves; When go badly, it's others' fault or bad moment. **"Fundamental attribution error"**.
- Male donate more if approached by female for fund- raising.

Behavior Change Framework

Mindspace Cue	Behavior	Psychological Processes (and Brain Mechanisms)
Messenger	We are heavily influenced by who communicates information to us	Attraction (impulsive); Trusting (impulsive)
Incentives	Our responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses and mental accounts	Greed (impulsive); Fear (impulsive)
Norms	We are strongly influenced by what others do	Belonging (impulsive); Motor (habit)
Defaults	We “go with the flow” of pre-set options	Fear (impulsive); Comfort (impulsive)
Salience	Our attention is drawn to what is novel and seems relevant to us	Mental (habit)
Priming	Our acts are often influenced by sub-conscious cues	Motor (habit)

Mindspace Cue	Behavior	Psychological Processes (and Brain Mechanisms)
Affect	Our emotional associations can powerfully shape our actions	Disgust (impulsive); Fear (impulsive); Attraction (impulsive)
Commitments	We seek to be consistent with our public promises, and reciprocate acts	Status (impulsive); Motor (habit)
Ego	We act in ways that make us feel better about ourselves	Status (impulsive); self-worth (impulsive)

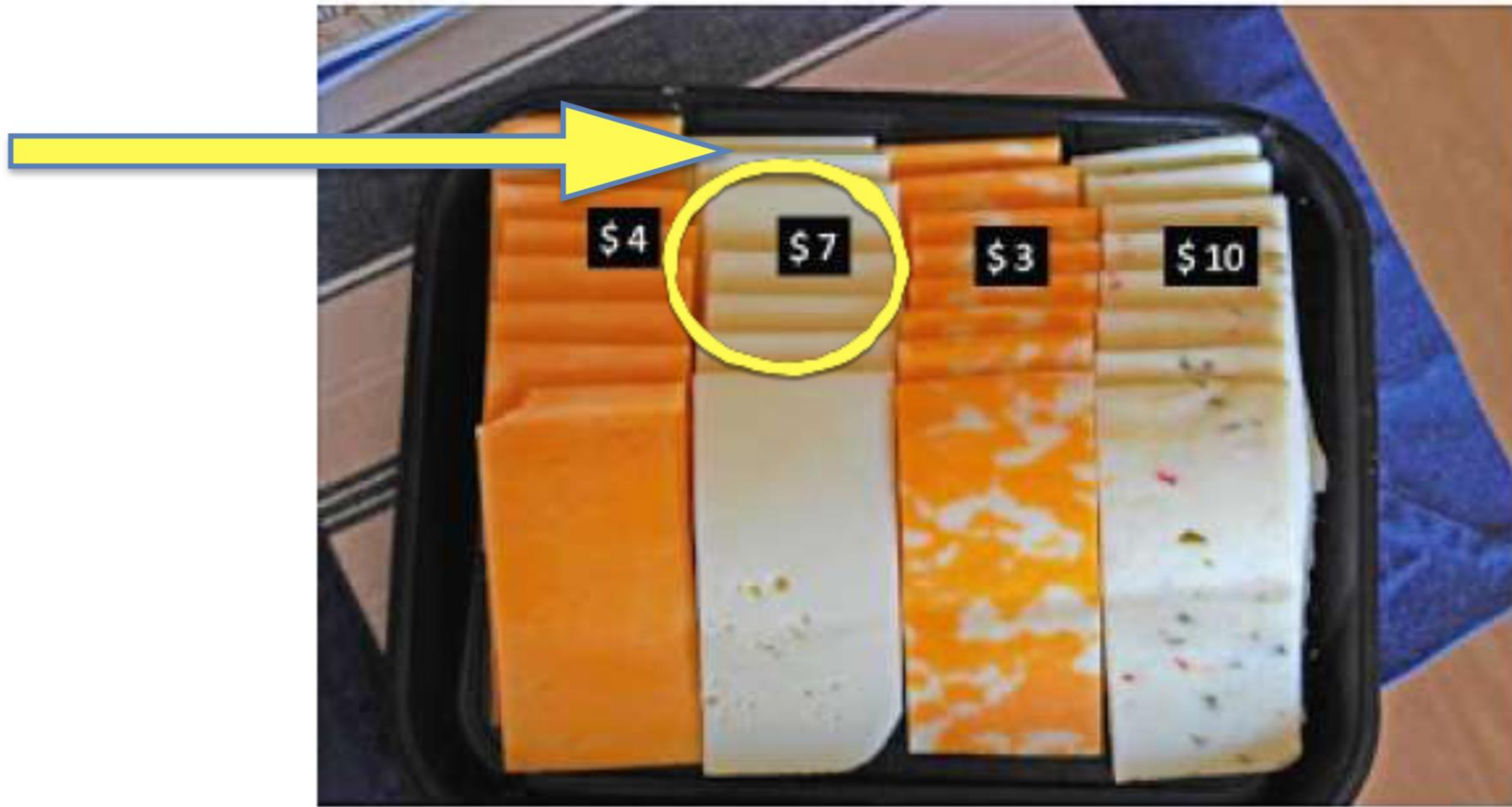
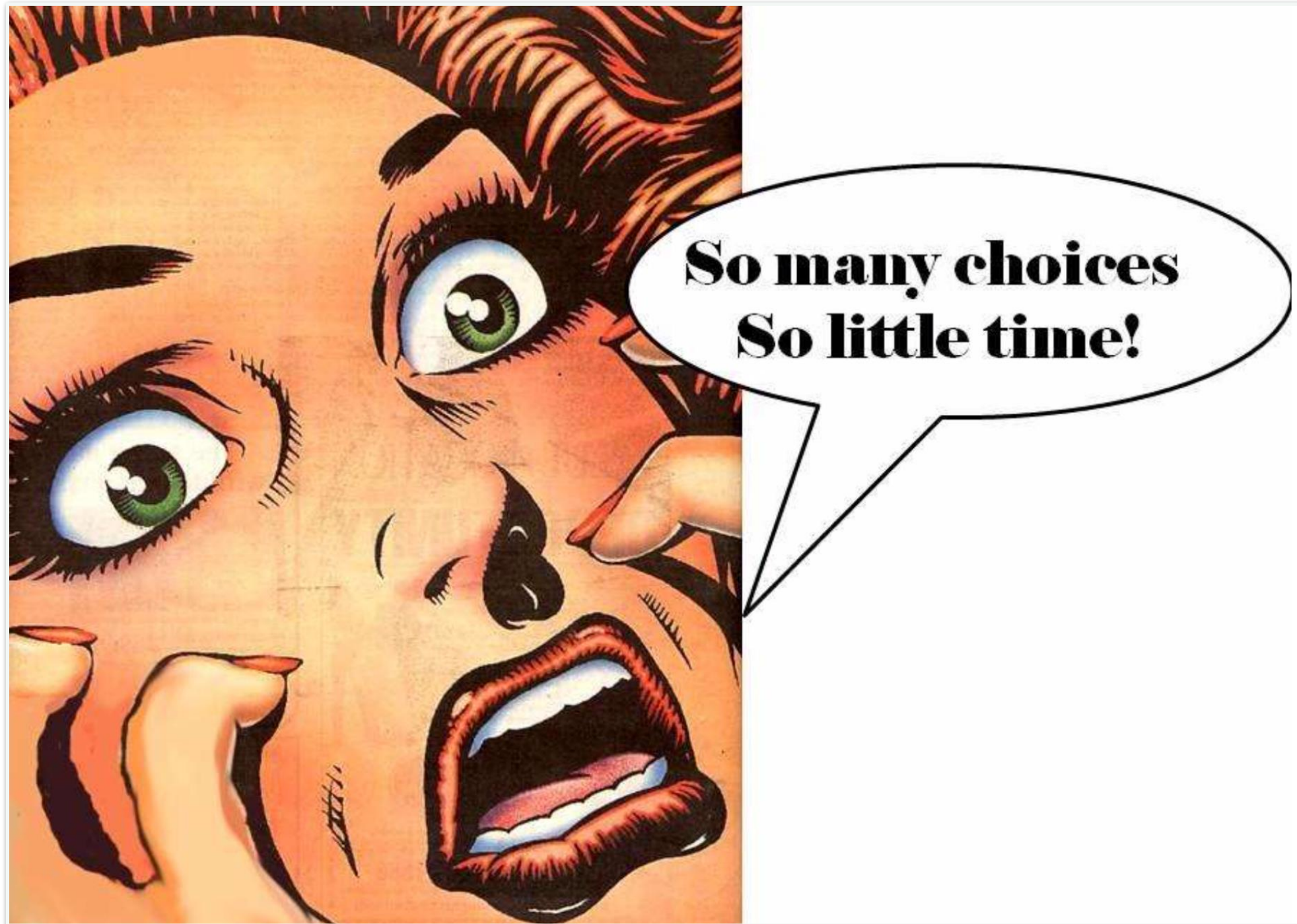


Photo By Esha Samajpati

Studies show most people tend to choose the second most expensive item on the list.

Tyranny of Choice



<https://www.economist.com/christmas-specials/2010/12/16/you-choose>



Decision Paralysis

- ☑ “As the number of choices keeps growing, negative aspects of having too many options begin to appear.”



<http://www.swarthmore.edu/SocSci/bschwar1/Choice%20Chapter.Revised.pdf>

Paradox of Choice

☑ “As the number of choices grows further, the negatives escalate until, ultimately, choice no longer liberates, but debilitates.”



Nudging

Priming Bias:
What we see or hear
immediately before a choice
affects how we behave.

<https://www.slideshare.net/sgmitch/nudge09>

Nudging

CERTIFIED
Pre-Owned Vehicles

VEHICLE SEARCH

CURRENT OFFERS

MODEL INFORMATION

FINANCIAL CALCULATORS

APPLY FOR FINANCING

BROCHURE REQUEST

BENEFITS OF CERTIFIED

CERTIFICATION PROCESS

WARRANTY COVERAGE

EXTENDED WARRANTY

ROADSIDE ASSISTANCE

CONCIERGE SERVICE

MY ACURA

Brochure Request

Receive a brochure that has information on the Certified Pre-Owned Inspection process, CarFax reports, warranty, and more.

First Name*

Last Name*

Street Address (Line 1)*

Street Address (Line 2)

City*

State*

Zip Code*

When will you acquire your next vehicle?

☐ Within 3 months
 ☐ 3-6 months

☐ 7-12 months
 ☐ More than 12 months

Would you like to be contacted by your local Acura dealer?

☐ Phone
 ☐ Email

Would you like to sign up for any of the following Acura.com email subscriptions?

☐ General Acura News and Info
 ☐ RL
 ☐ ZDX
 ☐ TL
 ☐ MDX
 ☐ TSX
 ☐ RDX

SUBMIT

Adobe Acrobat Reader to view the PDF.

DOWNLOAD BROCHURE

Or Call Us

You may also request a brochure by calling Acura Client Services at 1-800-862-2872.

Dr. Lazaros K. Rizopoulos

L.K.Rizopoulos@gmail.com

Nudging

- ☑ Large railroad Europe made small change to its website so seat reservations would be included automatically with ticket purchases (at an added cost of 1-2 euros), unless the customer unchecked a box on the online booking form.
- ☑ 9% of tickets included reservations before the change, 47% did after, **earning the railroad an additional \$40 million annually.**

Nudging

Demonstrate Social Proof

The image shows a screenshot of the Box website homepage. A red circle highlights the statistic "92% of Fortune 500s Use Box" in the top navigation bar. To the left of this, a blue box contains the text "NUDGE PRINCIPLE They like us. You should too." Below the highlighted statistic, there is a large white cloud graphic with "92%" inside it. The main content area features three columns: "Online File Sharing", "Security Leadership in the Cloud", and "What our customers are saying". At the bottom, there is a row of logos for various companies including P&G, Six Flags, Ballou Beatty, TaylorMade, GREY group, PANDORA, GIANTS, O2 media, AARP, and ZVZO.

NUDGE PRINCIPLE
They like us.
You should too.

box For Personal For Business For Enterprise IT Plans & Pricing Contact Sales 1-877-729-4269 Log In Sign Up

92% of Fortune 500s Use Box
For Procter & Gamble, Six Flags and Chrysler, the choice is clear.
Here's Why

92%

Online File Sharing
Box lets you store all of your content online, so you can access, manage and share it from anywhere. Integrate Box with Google Apps and Salesforce and access Box on mobile devices. [Learn More](#)

Security Leadership in the Cloud
Box pioneered a new level of content management security, with role-based access controls, 99.9% uptime guarantee, and data encryption using 256-bit SSL. Box has also been issued an SSAE 16 Type II report. [Watch Video](#) • [Learn More](#)

What our customers are saying
We're excited about what we've done with Box. We've enjoyed a very stable, high quality service that's reliable with great performance.
— Pandora. [Learn More](#)

Over 140,000 businesses use Box. [View Case Studies](#)

P&G Six Flags Ballou Beatty TaylorMade GREY group PANDORA GIANTS O2 media AARP ZVZO

Nudging

Play The Name Game

get satisfaction Request Info | Login/Register | Blog | Resource Center | Help
Call Us: 877-339-3997
Pricing Products Solutions Customers Partners Company

FREE Sign Up
Create your Community

Select Your Plan

30 Day Risk Free Trial. Upgrade, Downgrade, or Cancel Anytime.

Start	Grow	Connect	Enterprise
\$19/MO	\$49/MO	\$99/MO	Contact Sales for Pricing
Perfect for small companies looking to get started with Community.	Extend your Community to the world's largest social network.	Enhance your customer's experience with customization, premium widgets, and domain aliasing.	Get a 360-degree view of your customer by integrating with existing business systems.

NUDGE PRINCIPLE
Aspirational naming converts better.

Nudging

Flip Everything!

NUDGE PRINCIPLE

Numerical
anchoring makes
bigger prices
more palatable

Grasshopper®
The Entrepreneur's Phone System

24/7 Support 1.800.279.1455

Sign Up Instantly for Grasshopper
30 Day Money Back Guarantee. No Long Term Contracts.

MAX	GROW	RAMP	Pay As You Grow
\$199 A MONTH	\$49 A MONTH	\$24 A MONTH	\$12 A MONTH
10,000 Minutes PER MONTH	2,000 Minutes PER MONTH	500 Minutes PER MONTH	6¢ / Minute NO MINUTES INCLUDED
3 Toll Free/Local Numbers UNLIMITED Extensions UNLIMITED Voice Studio EVERY INCLUDED FEATURE	2 Toll Free/Local Numbers UNLIMITED Extensions UNLIMITED Voice Studio EVERY INCLUDED FEATURE	1 Toll Free/Local Number UNLIMITED Extensions UNLIMITED Voice Studio EVERY INCLUDED FEATURE	1 Toll Free/Local Number UNLIMITED Extensions UNLIMITED Voice Studio EVERY INCLUDED FEATURE
Free Activation	\$25 Activation FREE Activation!	\$25 Activation FREE Activation!	\$25 Activation FREE Activation!
Choose this Plan »	Choose this Plan »	Choose this Plan »	Choose this Plan »

Nudging

Limit Choice



An expansion in social media beyond a marketing and engagement philosophy to that of oneness. Image source: iStockphoto

Where social media is managed today will start to evolve into a resource center to **empower teams to engage around a common vision** on their own accord. The business itself thus becomes social and this paves the way for a **focus in 2014 around a more human culture shift and business transformation.**

*Brian Solis, principal analyst at Altimeter Group and author of *What's the Future of Business* and *The End of Business as Usual*.*

What do you think? How do you see social media in 2013? What trends do you anticipate? Please share your thoughts and comments below.

Images from iStock

995 99 145 53 74

Tweet Like Share +1 134 Buffer

Send

Pin it

Tweet 995 Share 145 Like 99 Send +1 54 Pin it

TOO MANY CHOICES

Nudging

Nudge Over Time, Not All At Once

The image shows a collage of several Windows 8 promotional cards. The cards are titled 'Stay connected', 'Explore and connect', 'Pin it', 'Flip it', 'Stay in touch', and 'Be connected with SkyDrive'. Each card contains a brief description of a feature and a list of steps to use it. A large blue speech bubble on the right side of the collage contains the text: 'NUDGE PRINCIPLE Multiple, shorter requests for action over time work better than a single, lengthy task list.'

Stay connected
Windows helps you stay up-to-date with your favorite people, places, and things.

Explore and connect
Fast, fluid and perfect for touch, Internet Explorer 10 makes connecting with the world easier than ever.

Pin it
Get from your Start Screen to the sites you love with just one touch.
1. Open Internet Explorer 10 and type in your favorite URL.
2. Swipe up from the bottom of your screen to show the address bar.
3. Tap the pin icon in the lower right corner and then "Pin to Start".
Start pinning

Flip it
Explore your favorite sites as easily as you turn a page.
1. Open Internet Explorer 10.
2. Swipe from the right to open charms and select "Settings".
3. Tap "Internet Options" and then "Turn on flip ahead".
Try flip ahead

Stay in touch
Skype
Try it

Be connected with SkyDrive
Easily store documents, photos and more in SkyDrive from your Windows 8 apps. So wherever you go, you're connected to what matters to you.
Learn more

NUDGE PRINCIPLE
Multiple, shorter requests for action over time work better than a single, lengthy task list.

Nudging





Literature of Research

- Kahneman, D. (2011). Thinking Fast and Slow. New York: Farrar, Straus and Giroux.
- Thaler, R. H., & Sunstein, C. R. (2008). Nudge: Improving decisions about health, wealth, and happiness. New Haven, CT: Yale University Press.

“They brought nudge theory to prominence. It also gained a following among US and UK politicians. ”

The same people, with the same problems, could be enabled to make better decisions.

“Nudge” worldwide

- British [Behavioural Insights Team](#) in 2010. It is often called the "Nudge Unit", at the British [Cabinet Office](#).
- President [Barack Obama](#): White House administration
- Australia government: Behavioral Insights community of practice
- Nudge theory has also been applied to [business management](#) and [corporate culture](#).

Don't Tell Me What I Can't Do!

- 2012: New York Mayor Michael Bloomberg tried to ban the sale of sodas and other beverages >16 ounces.
- This was a modest initiative, but the effort created a significant backlash.
- "Nudges" preserve freedom of choice, they do much better than mandates and bans;

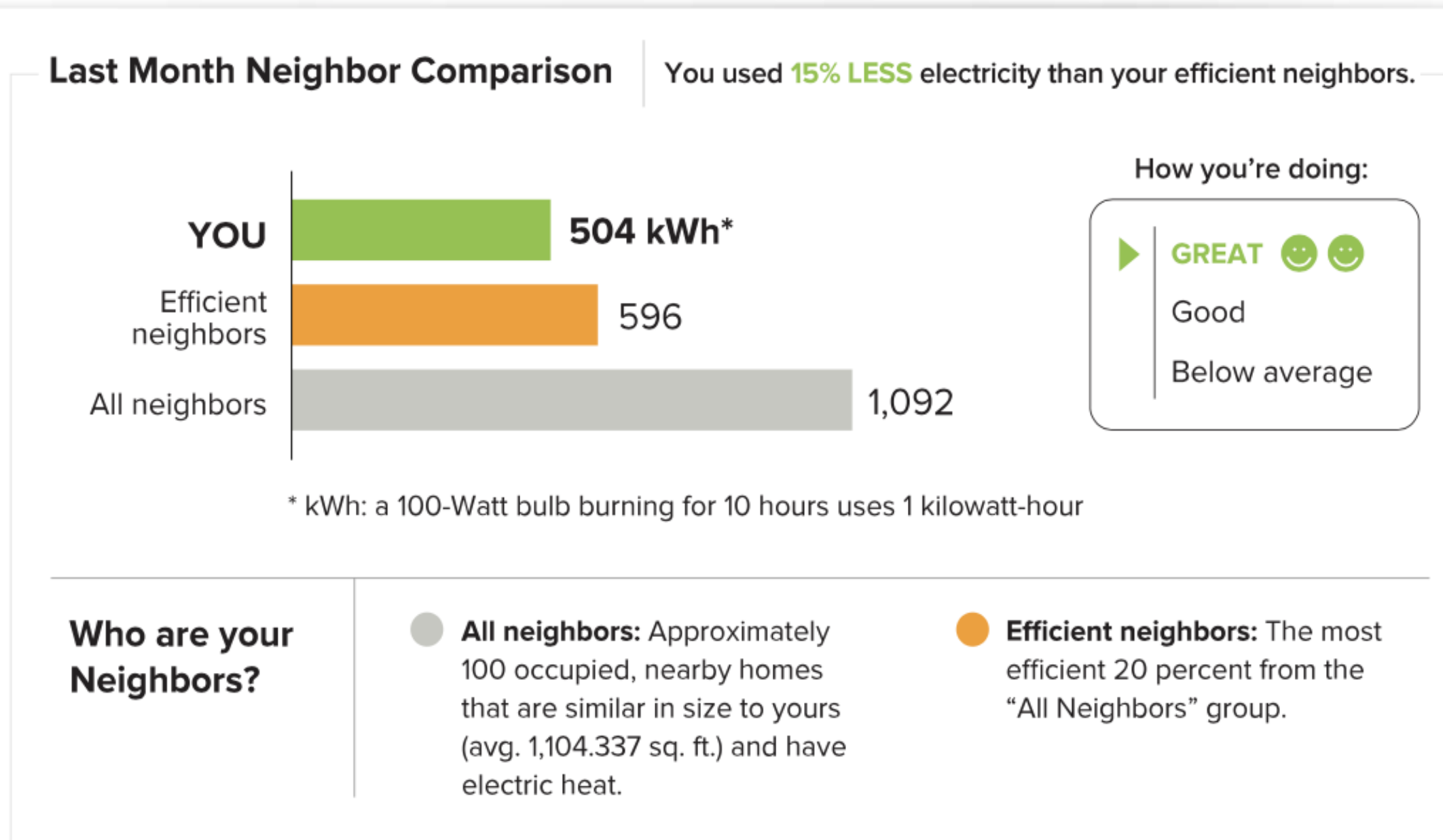
Don't Tell Me What I Can't Do!

- Proper Rewards
- “But You Are Free” (BYAF) Technique
- Change the Narrative



Well done!

On utility bills, householders who are told they use less electricity than their neighbors will often increase their usage — unless they also see a smiley face to let them know they're doing a good job.



Nudges

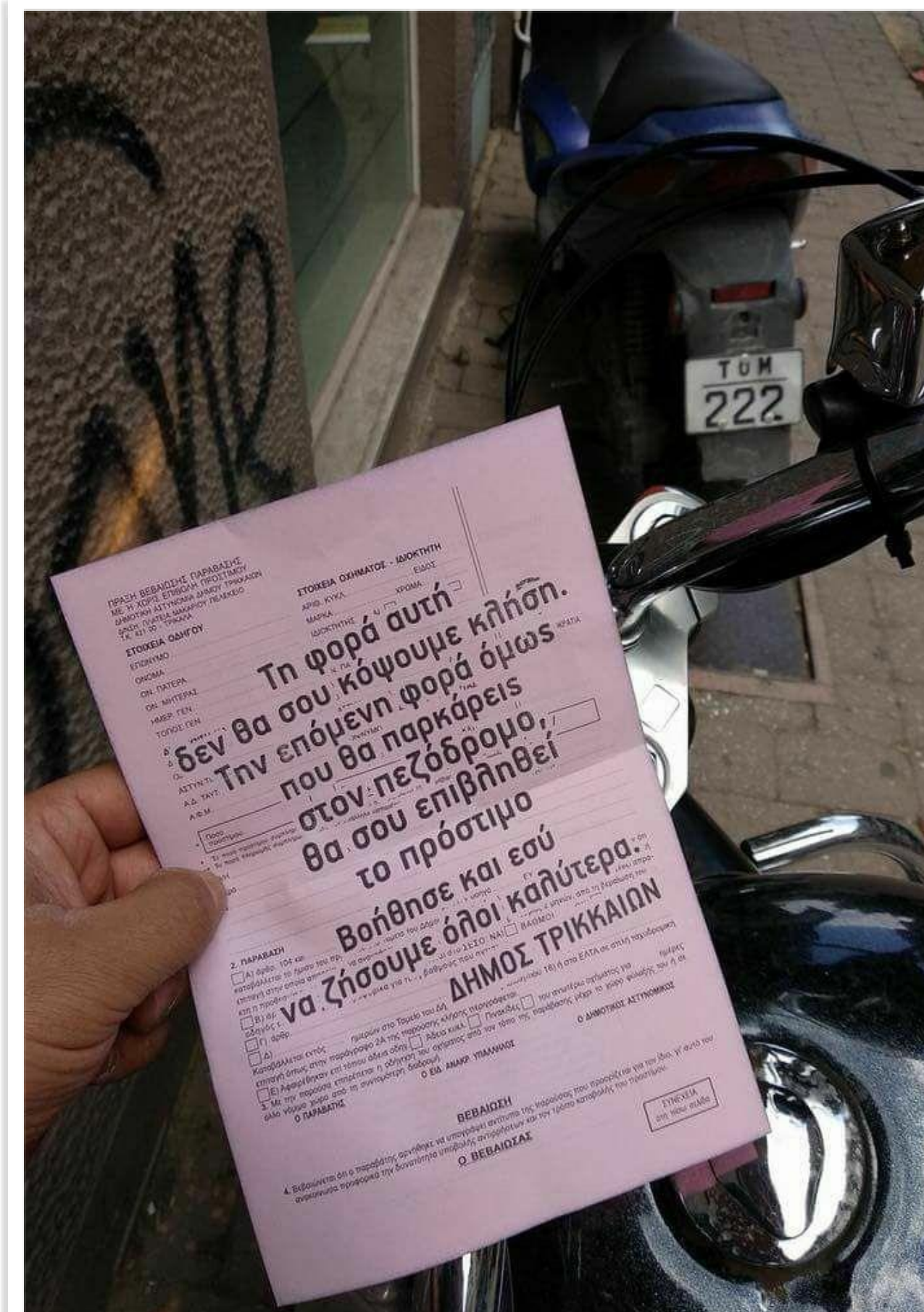


Nudges



Nudges





Attention: How and When

How it Works

GiftRocket combines the thoughtfulness of a gift certificate with the flexibility of cash.

- 1. Buy your friend a gift**
Choose any business. Deliver the gift to their email or Facebook wall, or as a printable card.
- 2. They redeem instantly**
We send them money to spend at the business before they go. They can choose a bank transfer, PayPal payment, or check in the mail.
- 3. They enjoy your gift**
They use the money to buy something nice or have a fun night out, thanks to you!

[Send a GiftRocket](#)

How it Works

GiftRocket combines the thoughtfulness of a gift certificate with the flexibility of cash.

- 1 Buy your friend a gift**
Choose any business. Deliver the gift to their email or Facebook wall, or as a printable card.
- 2 They redeem instantly**
We send them money to spend at the business before they go. They can choose a bank transfer, PayPal payment, or check in the mail.
- 3 They enjoy your gift**
They use the money to buy something nice or have a fun night out, thanks to you!

Questions? Check out our FAQ page. Learn why we're better than regular gift cards.

Attention: How and When

- Avoid heavy- texted pages. If needed, use novelty.

BUT INSTEAD YOU ARE WONDERING WHAT TO DO

You are full of doubt and reasons why you aren't successful. You are carrying around all you past failures like bag lady and you don't know how to move forward.

There are emotional obstacles to success like fear and motivation and there are practical problems like money and time. Neither has to keep you from achieving your potential.

You can have success but you have to address both emotional and practical obstacles. In your coaching session we will investigate exactly what is standing in your way and develop clear strategies for moving past those road blocks.

THE MOST COMMON ROADBLOCK TO SUCCESS IS NOT KNOWING WHAT YOU WANT

You have to define success for yourself. You have to know what your ideal life looks like. It can be hard to know without trying all the different options but who wants to spend the next 50 years searching for the right path.

You don't want to start something unless its the right choice, something you can stick to. In these coaching sessions we will look at what you already know about yourself and choose a path that will bring you success.

I believe that you not only have a right to shine but you have a responsibility to shine. When you have success you improve your family's life, your friends and community's lives, the economy, the world.

Your happiness and fulfillment is a imperative if you are going to do good in the world.

BUT INSTEAD YOU ARE WONDERING WHAT TO DO

You are full of doubt and reasons why you aren't successful. You are carrying around all you past failures like bag lady and you don't know how to move forward.

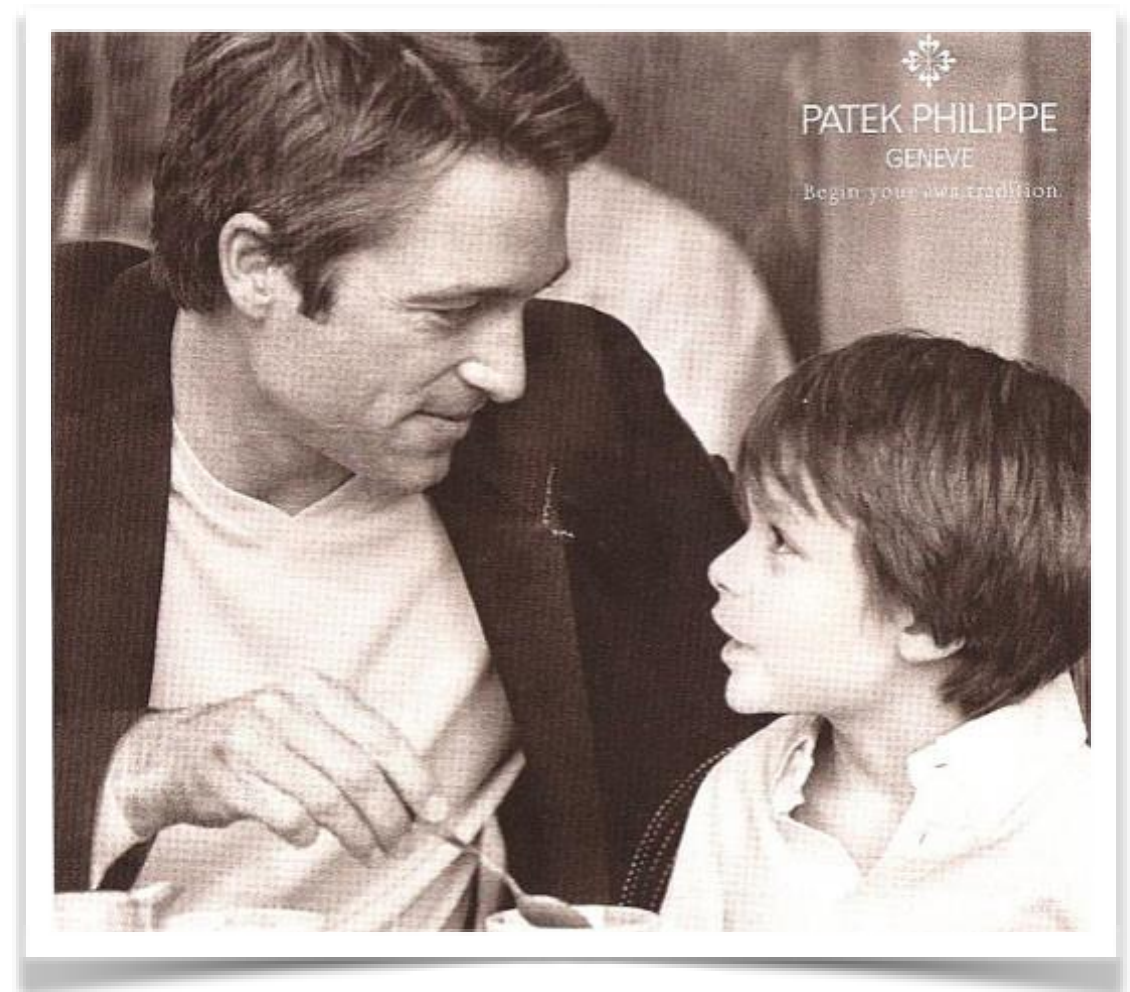
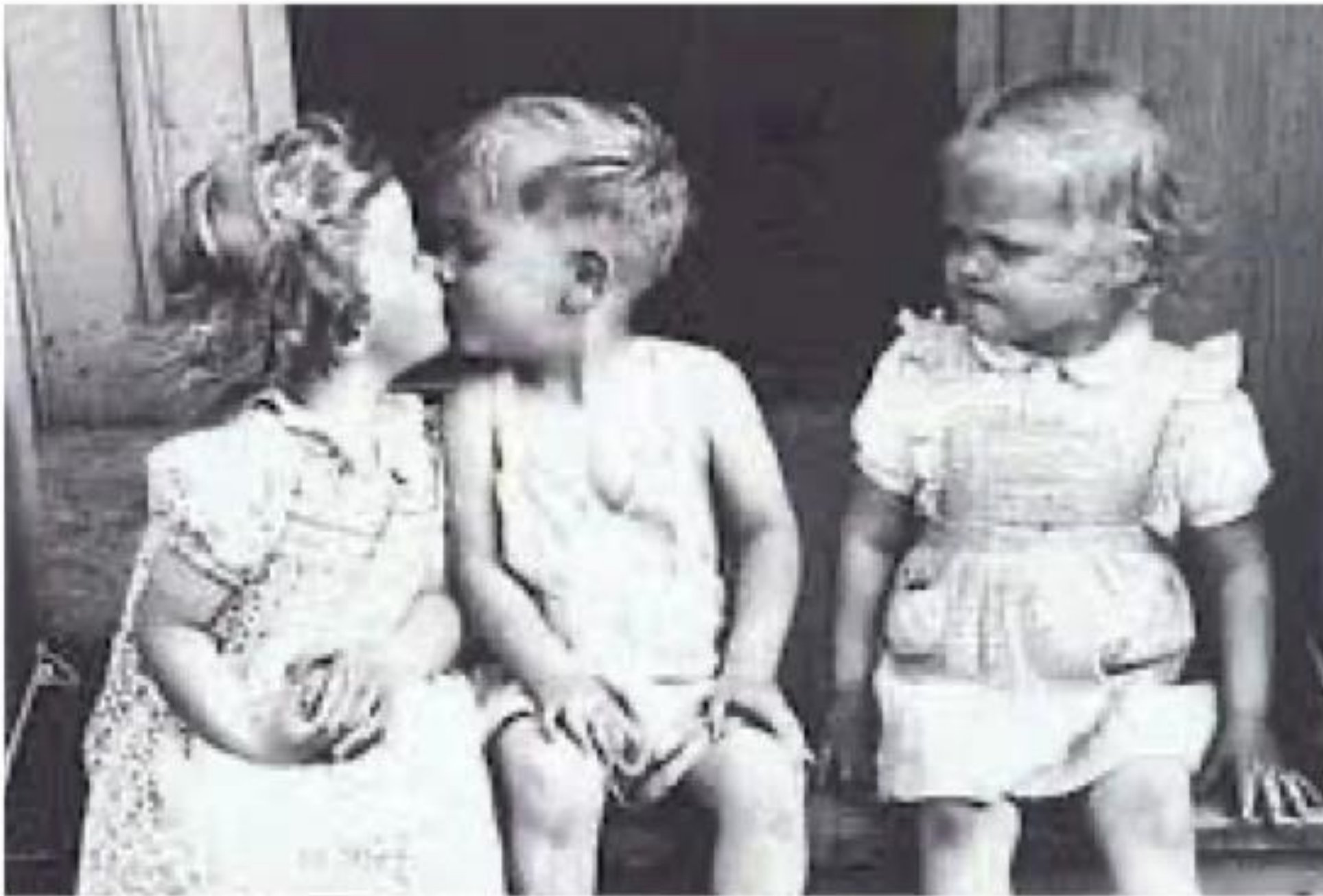
There are emotional obstacles to success like fear and motivation and there are practical problems like money and time. Neither has to keep you from achieving your potential.

You can have success but you have to address both emotional and practical obstacles. In your coaching session we will investigate exactly what is standing in your way and develop clear strategies for moving past those road blocks.



Grab Attention

- Inspire emotion. Create emotions.



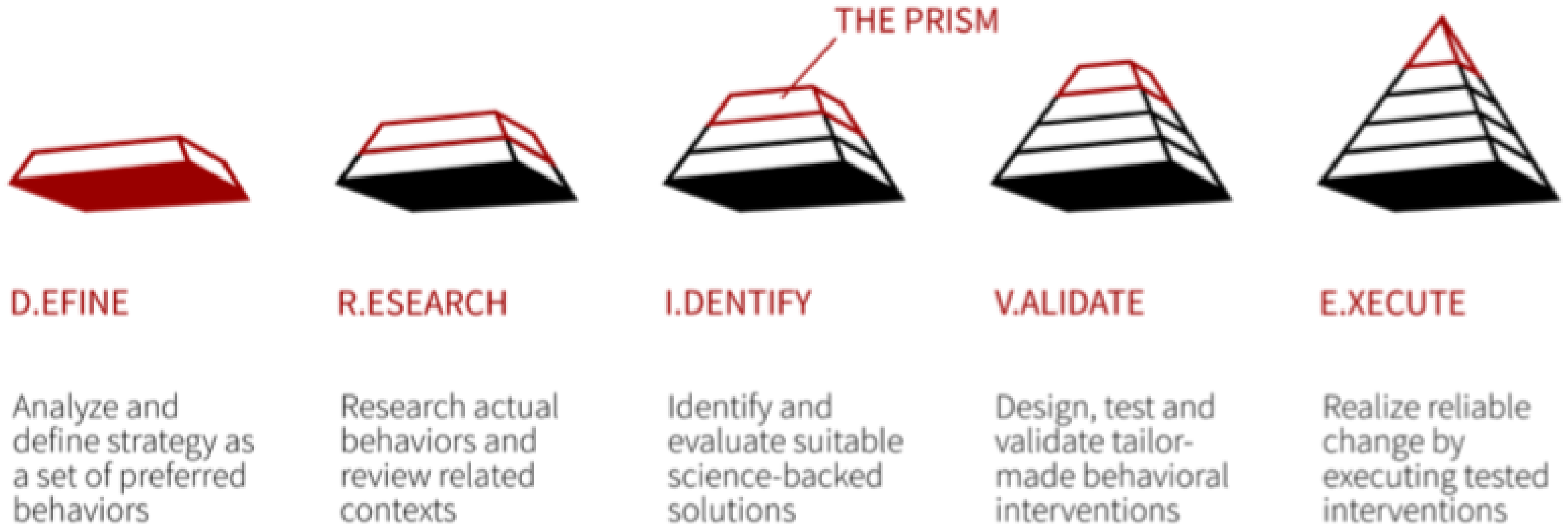
Grab Attention

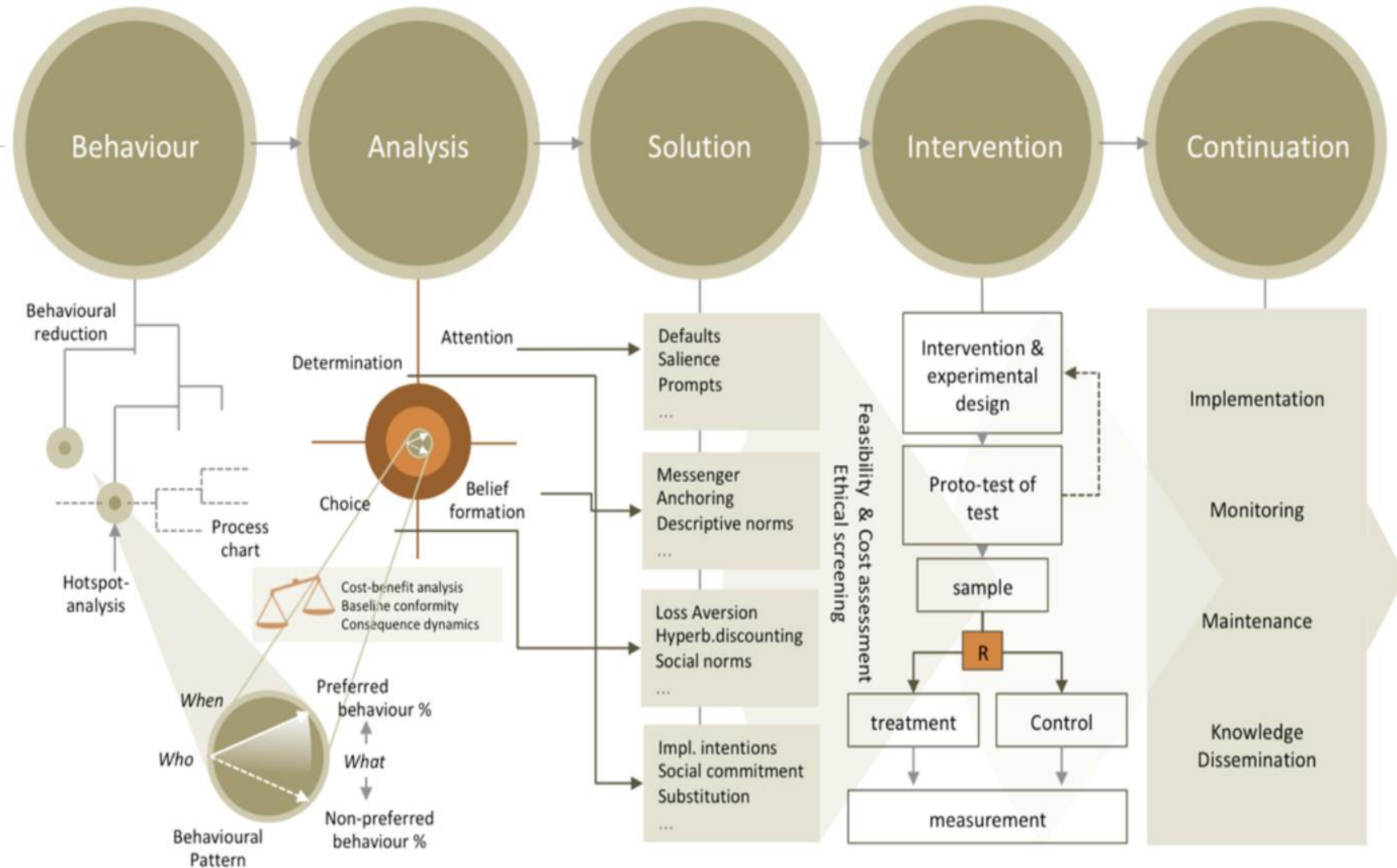
- People don't read. They scan. Plan accordingly.

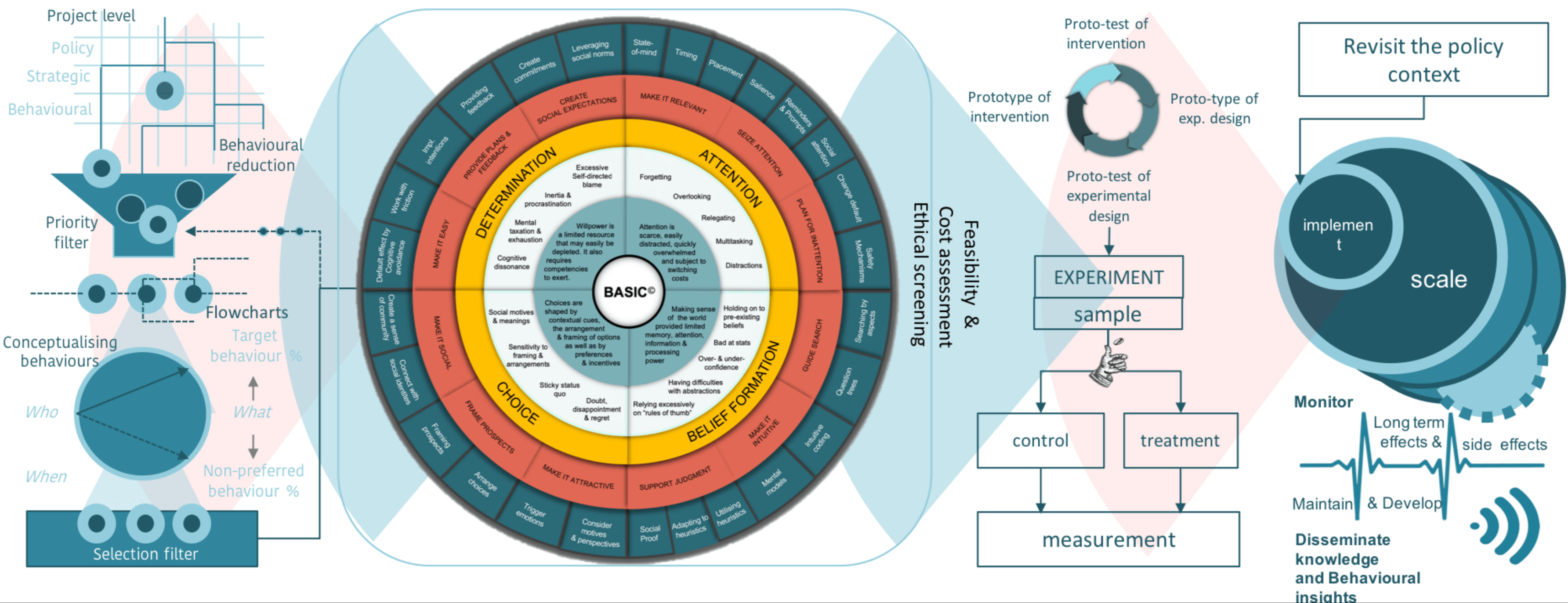


Models - DRIVE

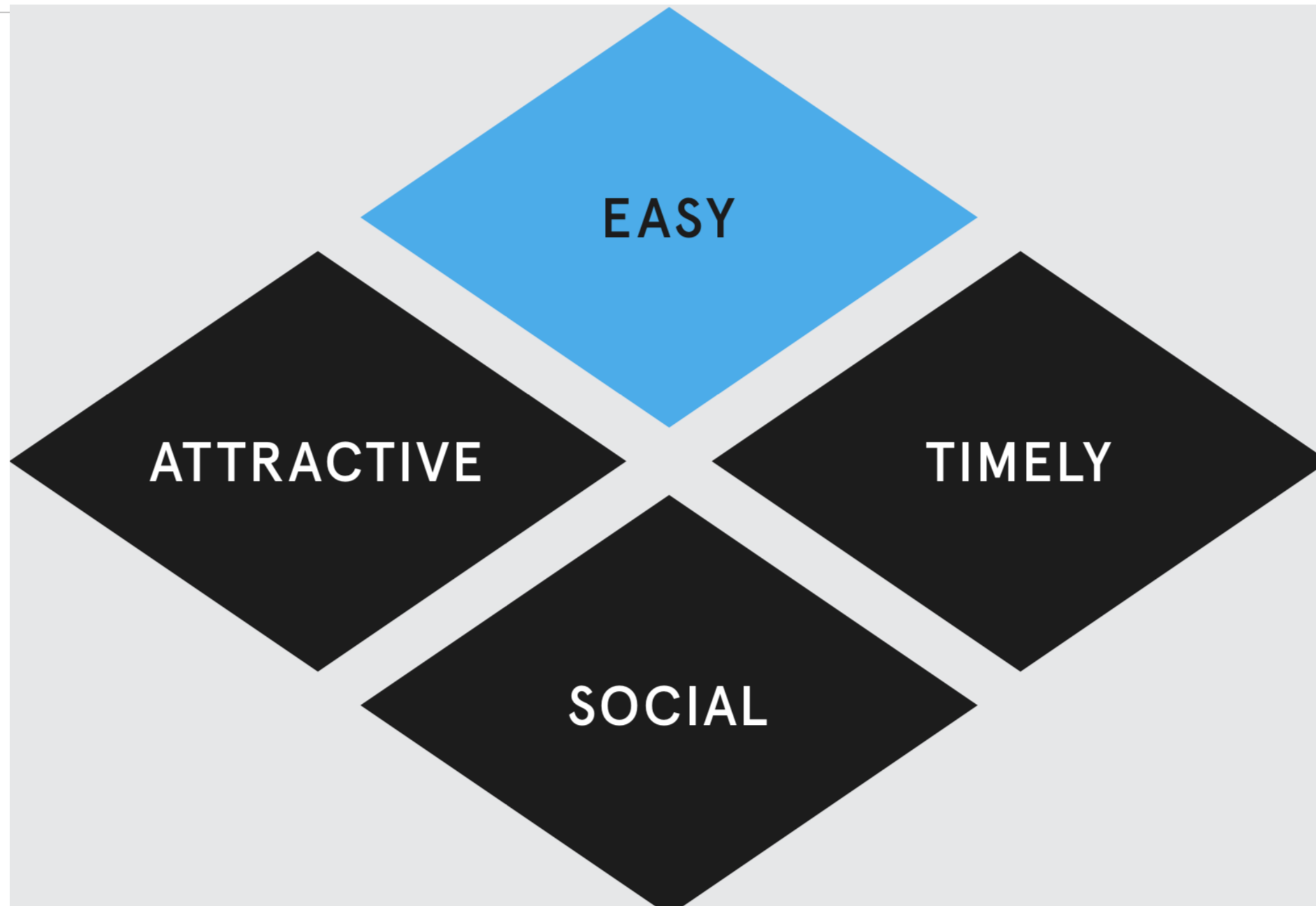
D.R.I.V.E.® - A practical framework for applying behavioral insights in strategy







Models - EAST



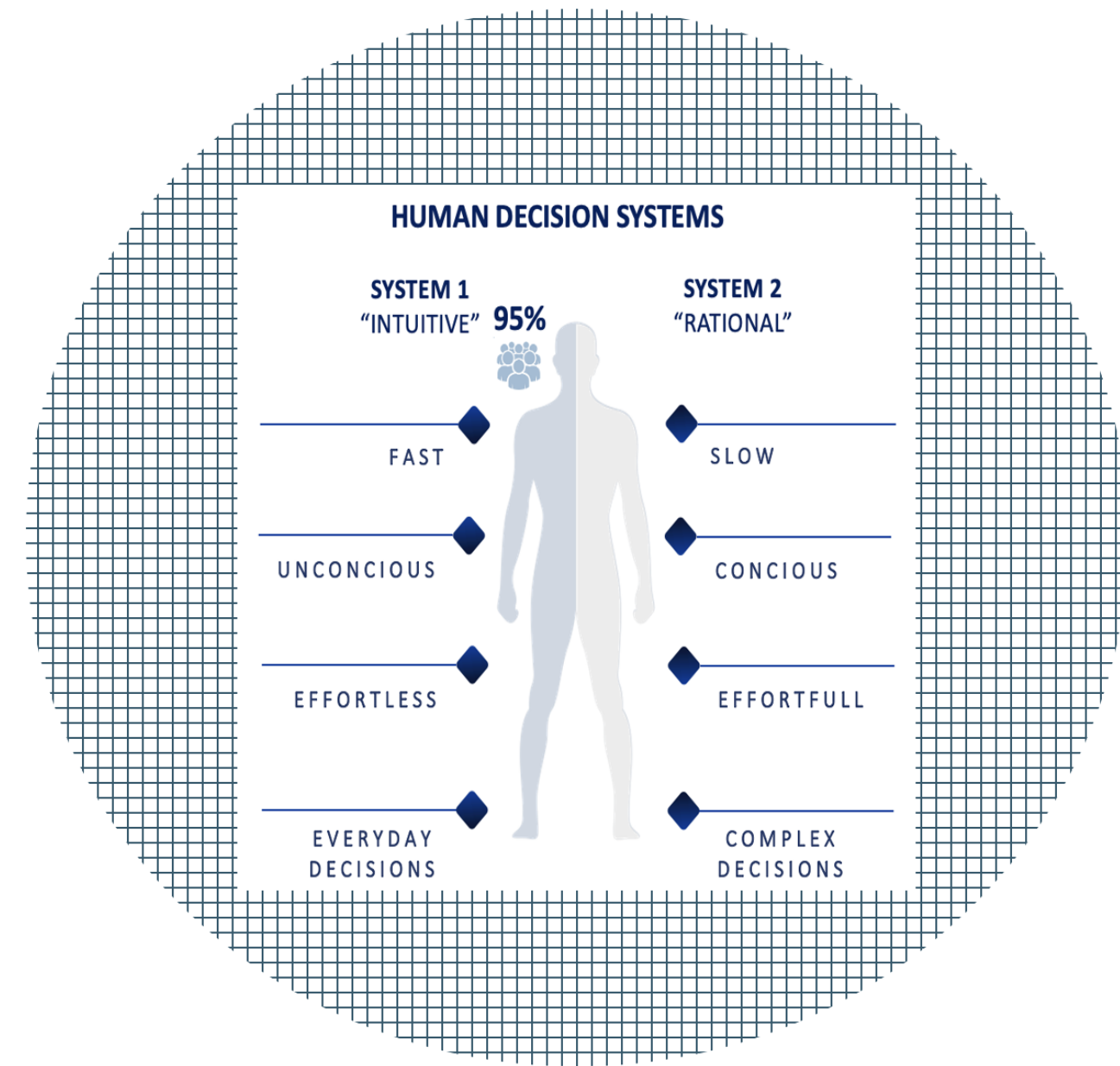
SWOT Analysis

Nudge

Choice Architecture



Let's talk about it



<https://demo.openeclass.org/courses/DEMO-A2605/>

Understanding Behavioral Economics Today

*Insights into Human Decision-
Making*



WHAT ?

- **SWOT (Strengths, Weaknesses, Opportunities, Threats)**
- A **SWOT analysis** is a method used to evaluate the **Strengths, Weaknesses, Opportunities and Threats** involved in a project.
- Begins by specifying the **objective of the project**.
- Then identifies
 1. the **internal (strengths and weaknesses)** and
 2. the **external (opportunities and threats)** factors that are favorable or unfavorable to achieving the objective.
- **Strategic planning tool**

WHAT ?

- **SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis**
- **Strategic planning tool**
- In the context of **business decision-making (but not only)** SWOT helps dissect the internal and external environment of an organization (or any examined entity)



Strengths

SWOT ANALYSIS



Opportunities



Weakness

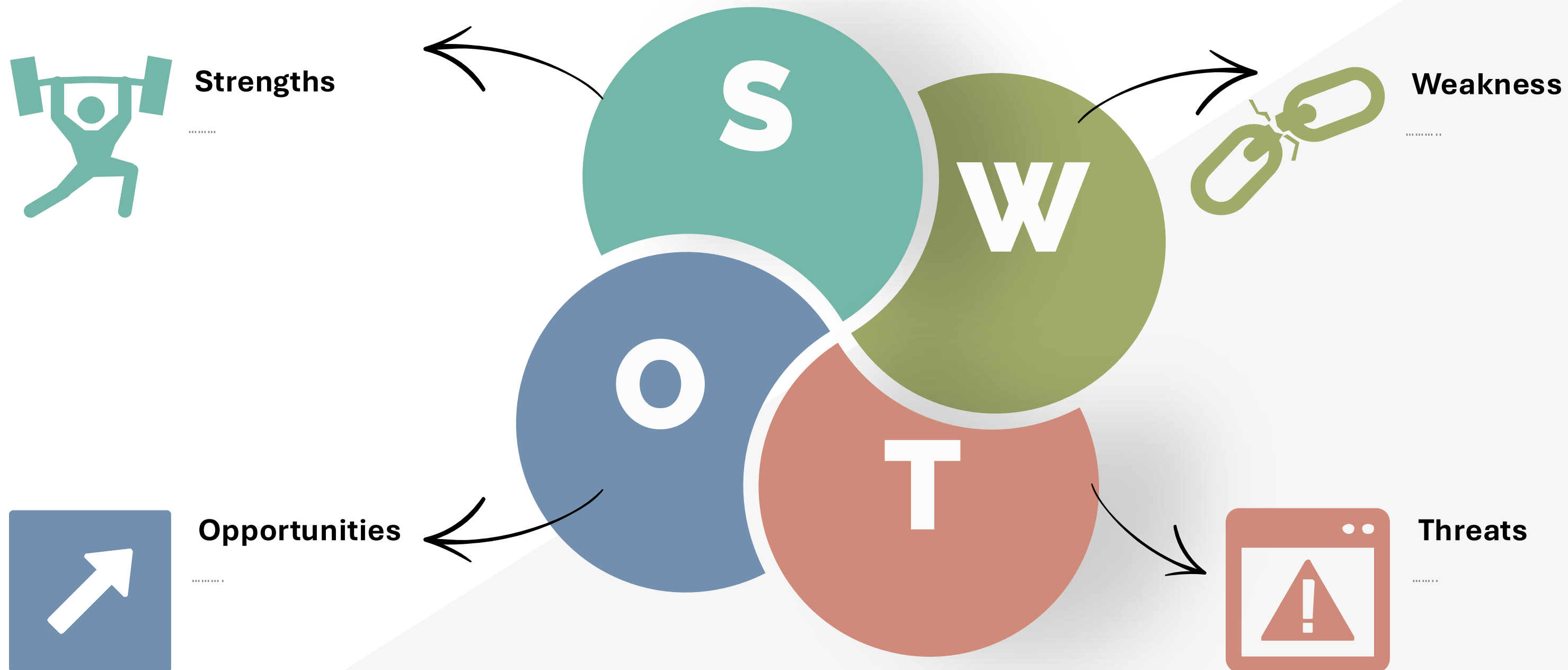
identify your project's/company's weaknesses and potential threats, as well as its strengths and the potential opportunities you plan to exploit.



Threats

SWOT OVERVIEW

identify your project's/company's weaknesses and potential threats, as well as its strengths and the potential opportunities you plan to exploit.



WHEN ?

RAM (RASCI)	AGB	PSC	PO	BM	BIG	SP	PM	PCT
Business Case	I	C	A	R	C	S	S	n.a.

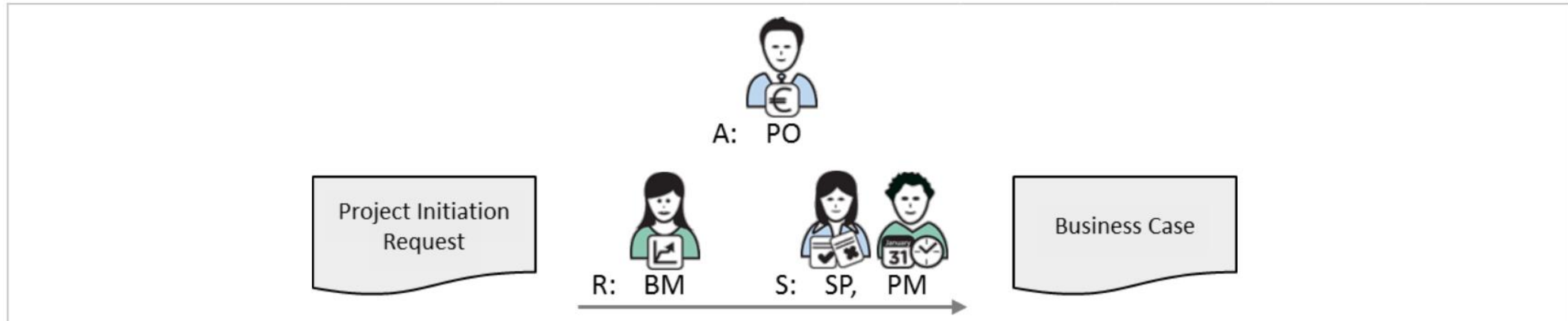


Fig 5.5 Business Case inputs and main roles

Related Artefacts	Initiating	Planning	Executing	Monitor & Control	Closing
Benefits Management	Business Case	Business Implementation Plan	Project Reports	Business Implementation Checklist	Project-End Report

5.3 Business Case

The purpose of the Business Case is to capture the reasoning behind the project, to describe the project’s alignment with the organisation’s strategic objectives, to provide a justification for the investment in time and effort, and to set out the budgetary needs. For larger strategic projects, the Business Case may also include an assessment of impact and risks along with a more detailed cost-benefit analysis.

The Business Case provides decision-makers with the information they need to determine whether the project is worth doing. The Business Case is a living document and therefore should be re-examined at critical project milestones to check that the expected benefits are still achievable, the costs/schedule fall within the budget/timeline, and the project is still relevant to the organisation and should be continued.

Key Participants	Description
Project Owner (PO)	Accountable for the Business Case.
Business Manager (BM)	Creates the Business Case, supported by the Solution Provider (SP) and the Project Manager (PM) (if known).
Other project stakeholders	Consulted in defining the project’s Business Case
Approver	A preliminary Project Steering Committee (PSC) or a higher-level Appropriate Governance Body (AGB)

Inputs

- Project Initiation Request

Steps

1. The Business Manager (BM) drafts the Business Case based on the information captured in the Project Initiation Request. The main project aspects to be analysed and presented are:
 - the project’s justification and impact
 - the project’s positioning in the overall organisational strategy
 - an assessment of Strengths, Weaknesses, Opportunities and Threats (SWOT Analysis) of several solutions, one of which is proposed for implementation
 - a cost benefit analysis, per identified solution, detailed to the extend required
 - synergies and interdependencies with other projects and initiatives
 - high-level project roadmap, including major milestones.
2. The Project Owner (PO) evaluates the Business Case and decides to approve or reject it.
3. The Project Owner (PO) sends the Business Case to the Appropriate Governance Body (AGB) if needed for corporate approval.

WHEN ?

WHERE ?



Project Management Methodology

Guide 3.1

<https://www.pm2alliance.eu/wp-content/uploads/2024/02/pm²-project-management-methodology-NO0523520ENN.pdf>

WHERE ?

E BOOK Decision Making

<https://demo.openeclass.org/courses/DEMO-A2605/>

Reaching a Peaceful End...Time for Party

“To every thing there is a season and a time
to every purpose...”

- ❖ Lt Col Lazaros Rizopoulos, PhD
 - +30 693 6639 913
 - L.K.Rizopoulos@gmail.com



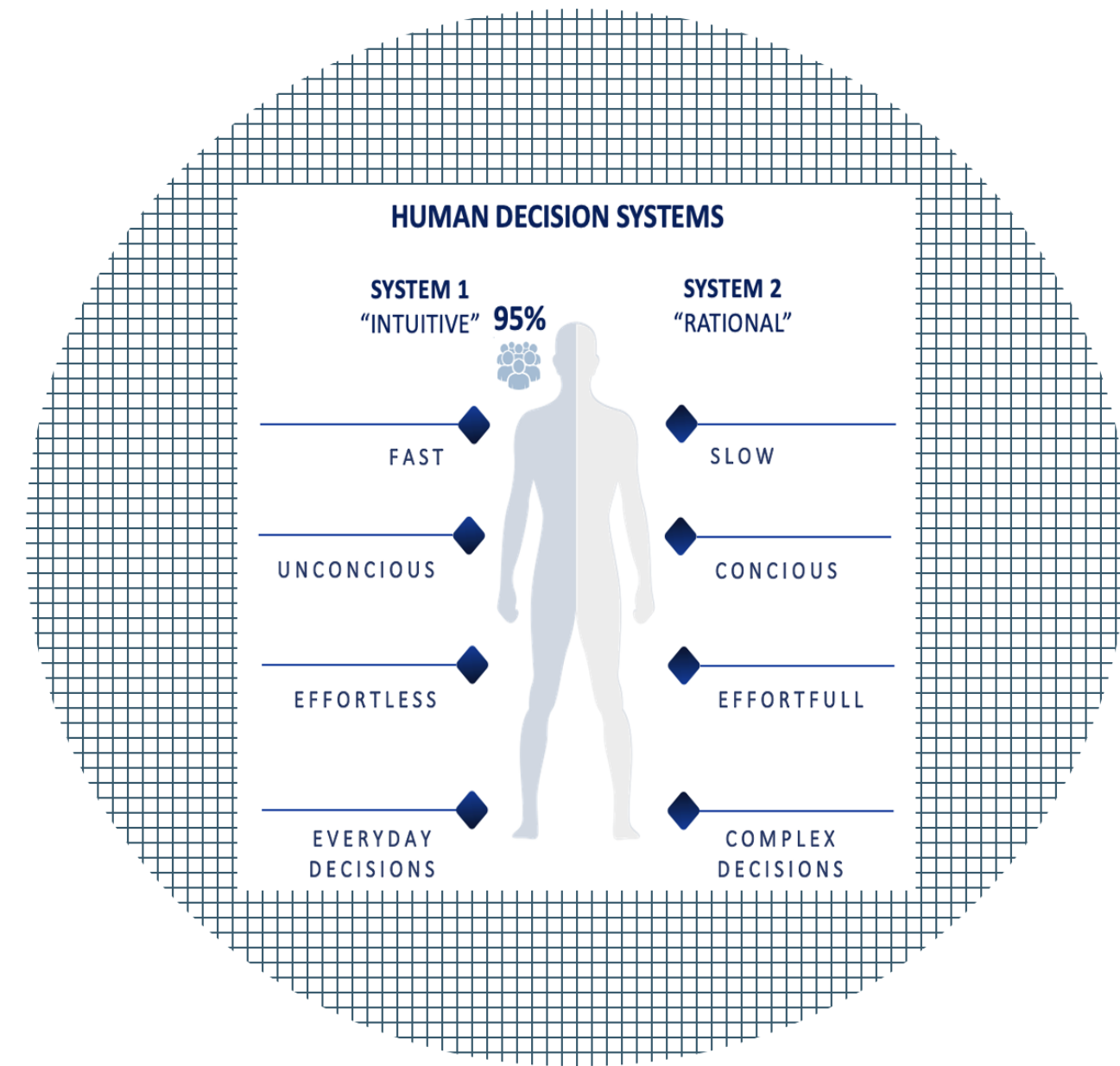
Scenario Based Forecasting

Nudge

Choice Architecture



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Understanding Behavioral Economics Today

*Insights into Human Decision-
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Theory and Applications of Experts (WHAT)

- Research and applications concerning defense (primarily) sector (DS).
- Leadership and decision-makers in DS settle choices under uncertainty and chaos.
- Various factors may affect their decision-making processes (DMPs).

Our goal:

- to demonstrate how defense sector can use choice architecture to enable nudging people to make better choices, while suggesting tools that may substantially benefit DMP and maximize the efficiency of resources' allocation.

Theory and Applications of Experts (HOW)

- Identifying the significant factors concerning planning in strategic level and decisions and the way they affect DMPs in (primarily) military operations.
- Seeking the leadership style to be exercised within the framework of strict structures of AFs, that fosters military leaders to improve themselves.
- Utilizing a forecasting model of violations to answer if whether the forecasts of leader's actions can be used to modify the optimal response function of the follower.
- That model may effectively correlate specific stimuli, leading that way to automatic desired choices and behaviors broadly accepted as more cost-effective.

Theory and Applications of Experts (HOW)

- Several forecasting exercises indicating that predictability is quite high, more importantly in terms of sign/direction of change. Therefore considerable cost reduction decisions could have been made following the forecasts.
 -
- For our analysis we consider methods and models, primarily around the theta-method, that produce better forecasting performance over benchmarks.
- We examine the implications of structural changes in these series and provide examples where forecastability can be used to improve not only the underlying economic costs but also the full aspect of military necessities and expenditures.

Theory and Applications of Experts (WHY)

- Defense sector: daily, active and intensive resource allocation decisions - very costly.
- Moderating on these costs while maintaining operational capabilities results in two-fold gains:
 - ❖ improved decisions and improved morale in the military side
 - ❖ improved security perceptions from the civilian side
- Our suggestions frame the choice context with a formulated model and strategic tool: cost-savings, better outcomes and maximization of the resources' allocation.

Common Pitfalls

- Not a broad enough view of the context
- Static strategy (do not take into account trade-off decisions)
- Broad principles rather than specific initiatives - Not Benchmarking
- Constant adding of initiatives and programs without eliminating those that have become nonessential
- 'Star Trek' status

Why matters

- World not a safe place. From static to dynamic posture.
- Three things needed: Money, money, and yet more money.
- Must do more things —some of them new— with less.
- Follower's response to the Leader, critical issue.
- Nudge management has never been examined so far among the military DMPs.

Why matters

- The world (fast-changing and uncertainty) demands forecastability, speed and agility and an approach to strategic management that involves three basic stages:
 - understanding the context
 - making strategic decisions and weighing risks
 - executing amid uncertainty
- A good plan should be scientific and quantified as possible and focuses on performance:
 - Clear objectives and measures
 - Consensus on tools and transparent performance
 - Gathering data - Best data available, better than NO data

Why matters

- Benchmarking performance
- Predictability and Forecasting Methods - Big savings in Defense
- Dynamic strategy for uncertain times
- So far, studies have not researched and/or measured such interventions and their relative effectiveness on the specific context of Defence sector
- A novel forecasting method of violations pattern is provided as a tool to reduce defence expenditures and enhance cost effectiveness of defence sector's resources through improved and integrated DMPs

Why matters

- People between alternatives that involve risk and uncertainty, evaluate options based on reference points and that they are loss-averse (they dislike losses more than equivalent gains). As a result, individuals are more willing to take risks, in order to avoid a loss, than to secure a gain.
- Nudge theory is based on the premise that decisions are often easier to change when we “go with the grain” of human nature, when we follow rather than fight human nature.
- Decision-makers and people do not make choices in a vacuum. They are in an environment where many factors, can influence their decisions. The person who creates that environment is a “choice architect”. Changing the “choice architecture”, people could be enabled to make better decisions.

Why matters

- An initial and systematic review of existing documentation, relevant policies, programs and projects and legislation in a generic level and countries, organisations or bodies that have already implemented 'nudges' in their public or defense policy activities
- Survey questionnaires (50 defense experts, 400 semi experts and non experts) - publicly available MoD's and HNDGS data
- Personal and telephone interviews from high level key authorities' officials and business experts
- Forecasting exercises
- Statistical tools:
 - R
 - SPSS - Excel

Why matters

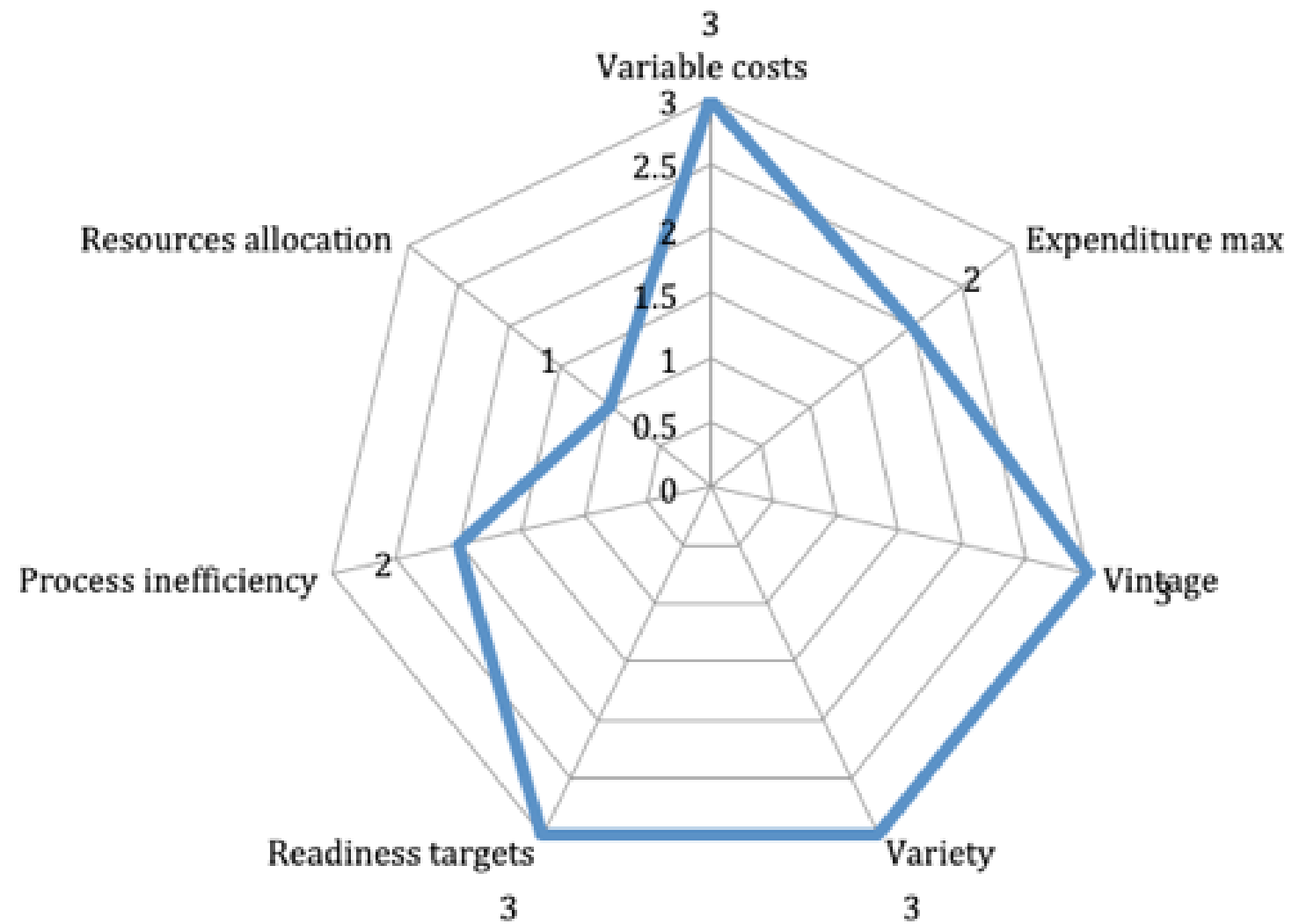
Experts' pool (100):

Public and Defense sector: Prime Ministers, Ministers (active and former), former Chief of Staffs, Ambassadors, Active and retired high rank Officials (Generals), Region Leaders, Mayors, NATO and UN high level representatives, Defence Industry Specialists and Commercial Representatives, Defence Attaches

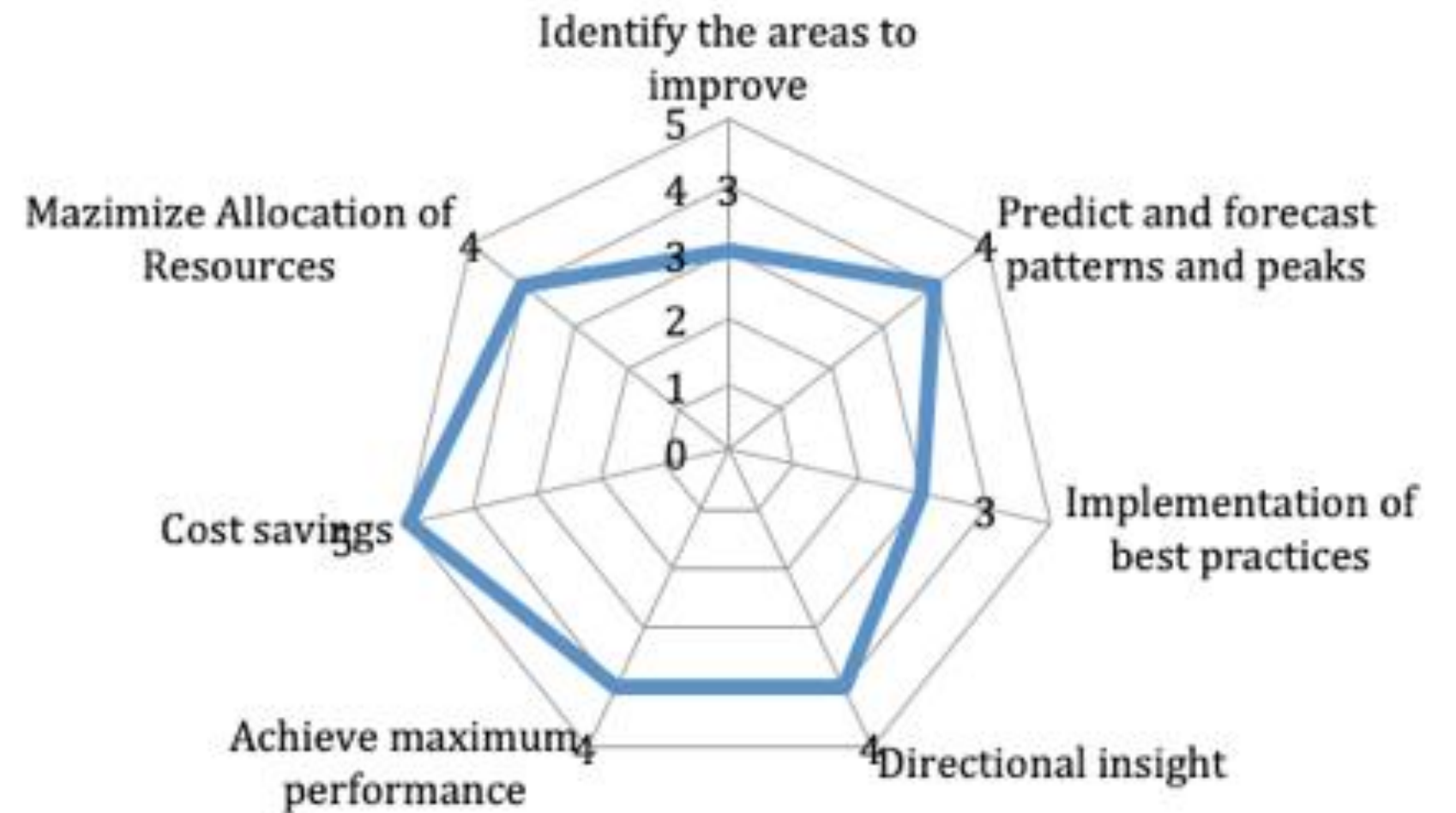
Business sector: CEOs, GMs, big business owners, HR, Business Development, Marketing and R&D managers

Star Trek vs...

Experts' Evaluation of "Star Trek" Status
(1 to 5, where 5 is best)



Nudges and Forecastability Potential Contributions
(1 to 5, where 5 is best)



Why matters

We run several forecasting exercises to examine predictability of violations.

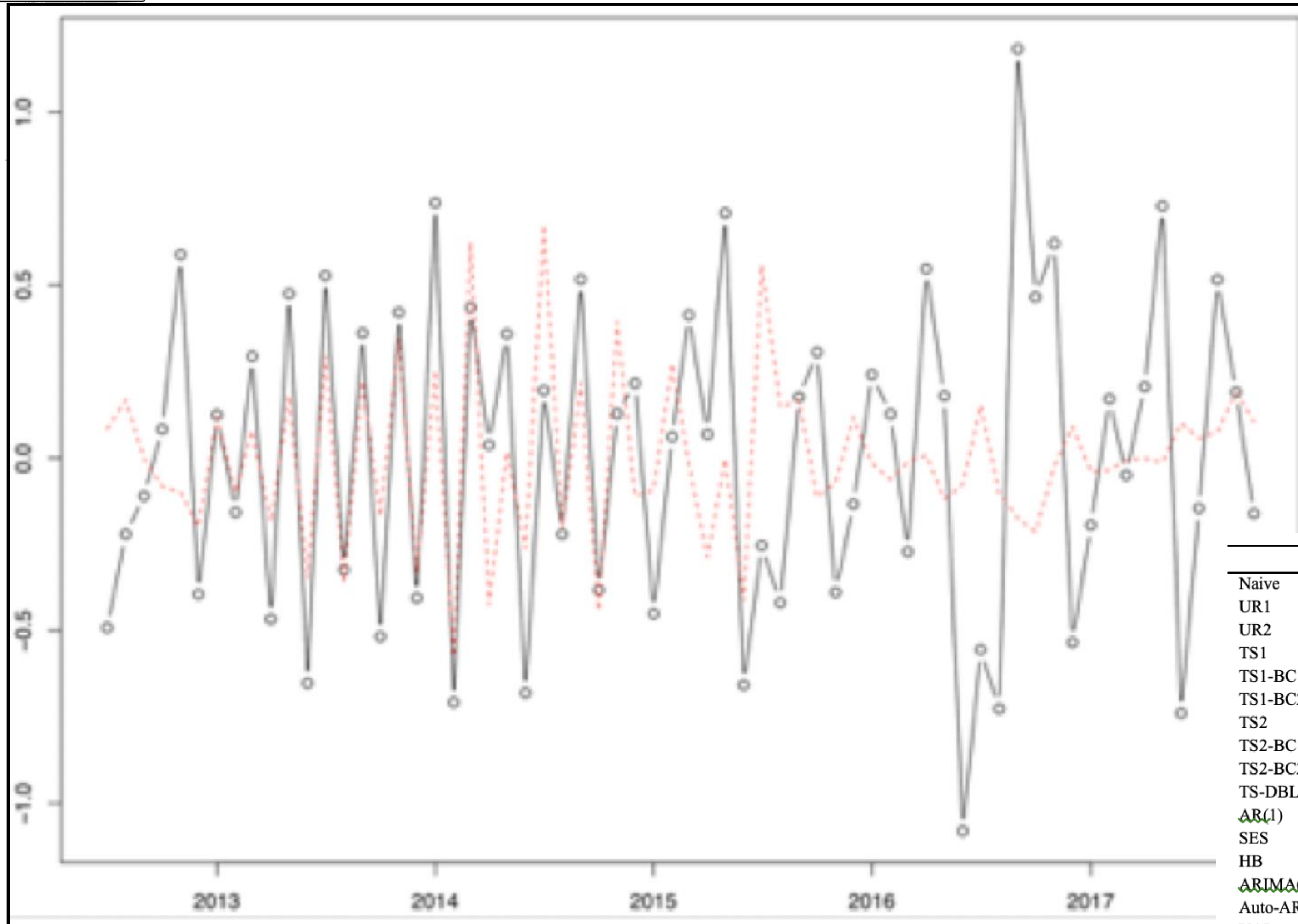
We conduct the analysis on a suitable combination of rolling and evaluation windows and data transformations (levels, log-levels, monthly differences and annual differences).

Forecasts are evaluated on standard statistical measures: root-mean squared error, mean absolute error, non-scaled and scaled Theil's Information Criterion and the Sign Success Ratio.

The first four measures are meant to judge variance, uncertainty and efficiency of the forecasts; the last measure is about measuring directional accuracy.

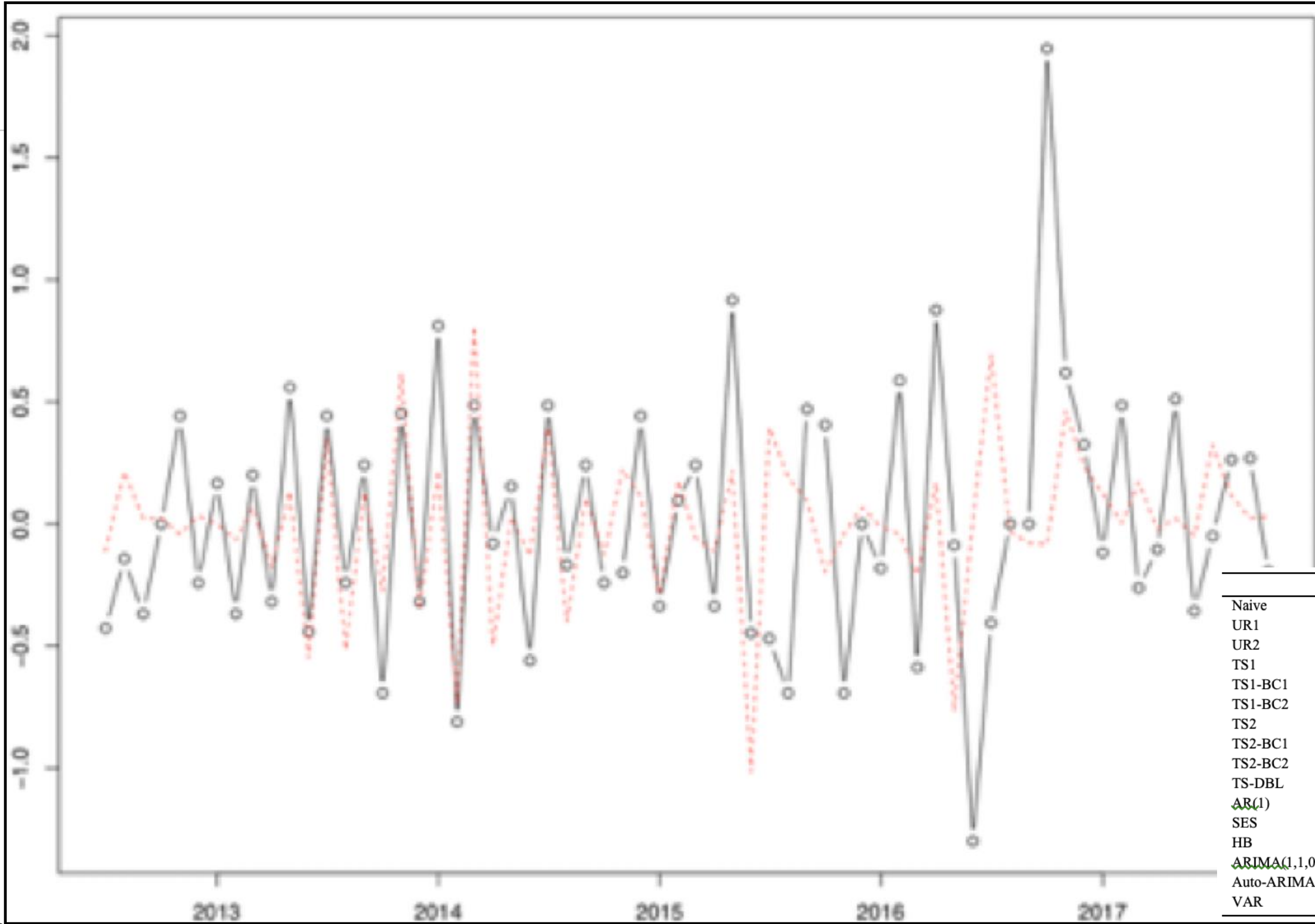
In each table the first two measures are always expressed as ratios with respect to the naive benchmark.

There is a total of 504 combinations that we consider and some selected results are presented in what follows.



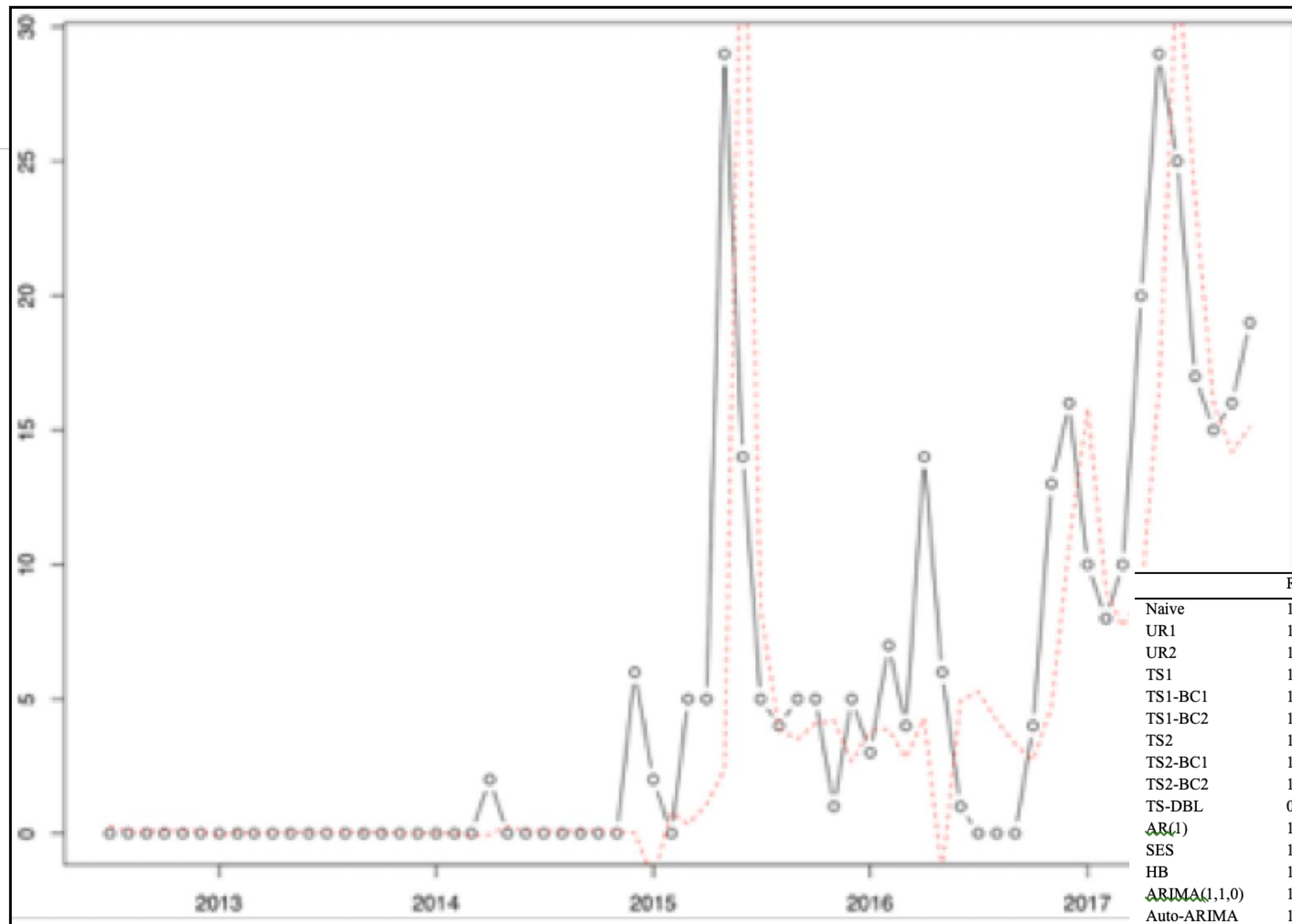
Results of exercise AC 3 30 12
(A/Cs violating FIR Athens)

	RMSE	MAE	U1	U2	SSR
Naive	1.000	1.000	1.000	1.000	0.000
UR1	0.765	0.687	1.035	0.765	0.781
UR2	1.296	1.279	1.660	1.296	0.781
TS1	0.597	0.566	0.931	0.597	0.828
TS1-BC1	0.600	0.567	0.931	0.600	0.844
TS1-BC2	0.597	0.566	0.932	0.597	0.828
TS2	0.823	0.707	1.066	0.823	0.750
TS2-BC1	0.823	0.709	1.066	0.823	0.766
TS2-BC2	0.817	0.705	1.069	0.817	0.750
TS-DBL	1.003	1.003	1.002	1.003	0.500
AR(1)	0.601	0.573	0.962	0.601	0.828
SES	0.630	0.630	0.940	0.630	0.828
HB	0.667	0.657	0.947	0.667	0.828
ARIMA(1,1,0)	0.726	0.698	1.102	0.726	0.781
Auto-ARIMA	0.768	0.699	1.045	0.768	0.781
VAR					



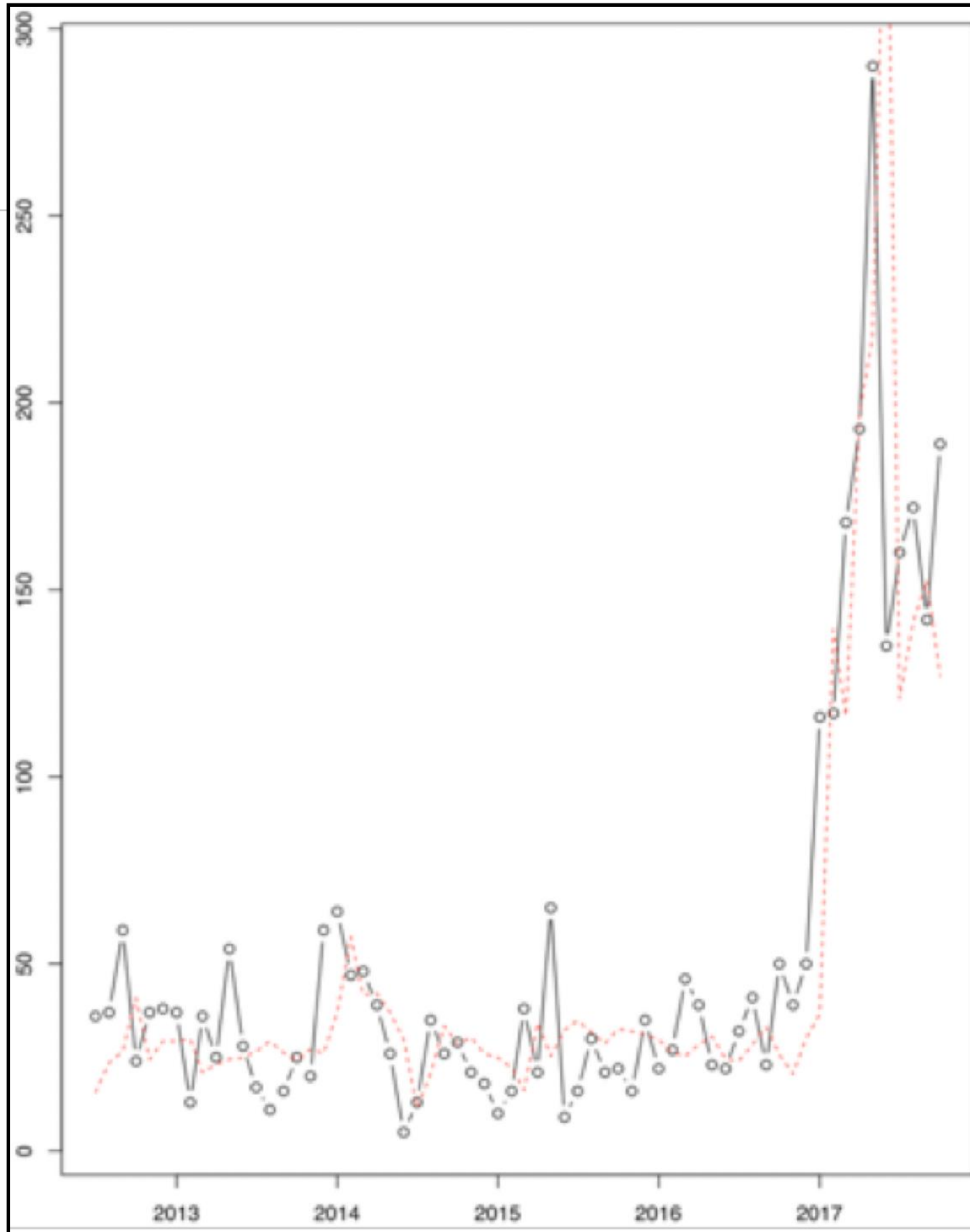
Results of exercise AV3 3 30 24
(Armed A/Cs violating FIR Athens)

	RMSE	MAE	U1	U2	SSR
Naive	1.000	1.000		1.000	0.016
UR1	0.774	0.714	1.232	0.774	0.766
UR2	1.280	1.167	1.896	1.280	0.766
TS1	0.621	0.539	0.830	0.621	0.859
TS1-BC1	0.619	0.537	0.831	0.619	0.859
TS1-BC2	0.621	0.538	0.829	0.621	0.859
TS2	0.926	0.867	0.927	0.926	0.734
TS2-BC1	0.927	0.867	0.928	0.927	0.734
TS2-BC2	0.931	0.868	0.925	0.931	0.734
TS-DBL	1.000	1.001	1.001	1.000	0.547
AR(1)	0.625	0.535		0.625	0.859
SES	0.646	0.600	0.854	0.646	0.859
HB	0.674	0.630	0.832	0.674	0.859
ARIMA(1,1,0)	0.787	0.745	1.151	0.787	0.719
Auto-ARIMA	0.779	0.716	1.235	0.779	0.781
VAR					



Results of exercise AV4 1 30 24
(Combat Flights)

	RMSE	MAE	U1	U2	SSR
Naive	1.000	1.000		1.000	0.484
UR1	1.062	1.083		1.062	0.562
UR2	1.591	1.624		1.591	0.547
TS1	1.145	1.097		1.145	0.359
TS1-BC1	1.142	1.097	1.150	1.142	0.328
TS1-BC2	1.145	1.099	1.142	1.145	0.328
TS2	1.134	1.055		1.134	0.359
TS2-BC1	1.132	1.057	1.131	1.132	0.328
TS2-BC2	1.133	1.056	1.123	1.133	0.328
TS-DBL	0.997	1.005	0.992	0.997	0.312
AR(1)	1.438	1.126		1.438	0.703
SES	1.107	1.200	1.153	1.107	0.312
HB	1.094	1.160	1.182	1.094	0.297
ARIMA(1,1,0)	1.111	1.156		1.111	0.375
Auto-ARIMA	1.064	1.083	1.034	1.064	0.250
VAR					



Plot of Naval Territorial Violations (exercise NV 3 30 24)

	RMSE	MAE	U1	U2	SSR
Naive	1.000	1.000	1.000	1.000	0.000
UR1	0.801	0.809	0.926	0.801	0.719
UR2	1.272	1.258	2.489	1.272	0.719
TS1	0.653	0.642	0.843	0.653	0.797
TS1-BC1	0.651	0.636	0.826	0.651	0.812
TS1-BC2	0.653	0.645	0.851	0.653	0.797
TS2	0.834	0.741	0.898	0.834	0.750
TS2-BC1	0.830	0.736	0.879	0.830	0.781
TS2-BC2	0.832	0.739	0.894	0.832	0.781
TS-DBL	0.997	0.993	0.991	0.997	0.578
AR(1)	0.574	0.572	1.015	0.574	0.781
SES	0.616	0.619	0.996	0.616	0.766
HB	0.636	0.630	0.787	0.636	0.797
ARIMA(1,1,0)	0.793	0.776	1.007	0.793	0.734
Auto-ARIMA	0.812	0.820	0.943	0.812	0.688
VAR					

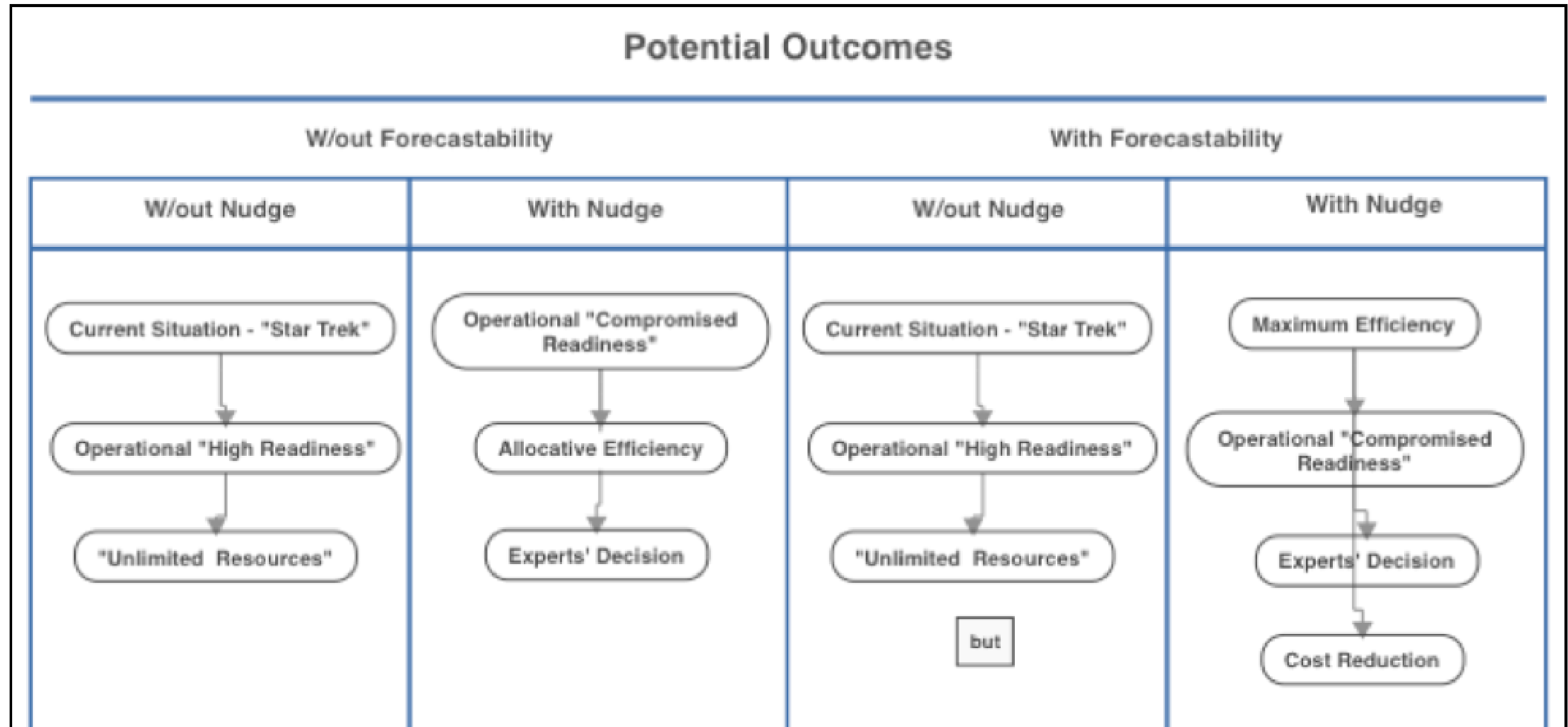
Results (Forecasting Exercises)

- Four main results:
 - ❖ Changes exhibit high predictability, before the Catalyst.
 - ❖ High predictability is suggestive of how one can incorporate the results in the decision making plan.
 - ❖ Where the pattern appears to be breaking up, one can consider intervention analysis (part of future research).
 - ❖ Data on two periods can be used to construct methods/models for forecasting under different scenarios.

RESULTS

- Nudge offers an **alternative to conventional** approaches and **contribute to a wide range** of defense sector (strategic, operational and tactical level).
- The forecasting model may bring accurately **predefined targets and defaults** for all incidents.
- If the forecast fails, then may follow the business as usual protocol. **Work backward**, analyse and **re-run** the model for better outcomes.
- Methodology may **break the routine behavior** and **work as a reminder** concerning the possible gains and losses.

RESULTS



RESULTS

W/out Forecastability		With Forecastability	
W/out Nudges & Interventions	With Nudges & Interventions	W/out Nudges & Interventions	With Nudges & Interventions
Star Trek Ops Full Readiness Unlimited Resources Highly Reactive	Operational Readiness <u>Allocative</u> Efficiency Experts Decision Moderate Reactive	Star Trek Operational Full Readiness Unlimited Resources Highly Reactive	Efficient Ops Readiness Maximum Efficiency Experts Learning Highly Proactive
<p>Star Trek - BCS scenario 1000 ACs (violating) - 500 ACs (interceptors) * 1 Flight Hour * 10,000 Euro cost/per hour = 5,000,000 <u>ms</u>/E</p>		<p>Star Trek - BCS scenario 1000 ACs (violating) - 500 ACs (interceptors) * 1 Flight Hour * 10,000 Euro cost/per hour = 5,000,000 <u>ms</u>/E</p>	
<p>Cost reduction cannot be defined due to experts' decision (Reactive and responsive criteria and risk averse attitude)</p>		<p>70% moderate predictability Reduction costs due to: Integrated training and ops flights. Readiness & MRO cycle efficiency Maximum resources' allocation, Other means, Sustainable strategic decision, AI & ML</p>	

RESULTS

	Follow	Do not Follow
Cost	4 out of 4 Improvement in Cost Savings	2 out of 4 improvement (only when actual results are lower than forecasting)
Risk	1 out of 4 increased risk (only when actual results are bigger than forecasting), anticipated though- immediate transfer to “Star Trek” status	“Star Trek” status Unlimited resources

Follow / Do not Follow Forecast Matrix					
		Forecast Results			
		Follow More (+)	Do not Follow Lower (-)	Follow More (+)	Do not Follow Lower (-)
Actual Results	More (+)	Cost / Risk WIN / Neutral	Cost / Risk Neutral / Neutral	Cost / Risk WIN / Antici- pated Risk	Cost / Risk Neutral / Neutral
	Lower (-)	Cost / Risk WIN / Neutral	Cost / Risk WIN / Neutral	Cost / Risk WIN / Neutral	Cost / Risk WIN / Neutral

RESULTS

Nudging offers an alternative to conventional approaches.

Our suggestions may substantially contribute to a wide range of other tasks of defense sector, regarding the three level of decision-making (strategic, operational and tactical level).

Through the forecasting model, HAFs may commit to accurately predefined targets and defaults for all violations incidents.

If the forecast fails, then decision-maker can follow the business as usual protocol and then should work backward, analyze and re-run the model for better outcomes in the future.

Methodology like this may break the routine behavior and work as a reminder to individuals concerning the possible gains and losses and enhance the fear of loss bias.

RESULTS

Nudges can help strategic DMPs to overcome the overestimated value of messages through leadership, which is considered to be credible and powerful. The model and pre-committed default decisions for action can motivate and enhance the quality of reporting and strategic DMP as also as de-biasing of the process.

Defaults can also contribute to counteract leadership pressure and lead to more efficient choices.

Nudge insights and our forecasting results may be utilized to address the common pitfall in strategic contexts of opponents' neglect and bring upfront the critical information concerning their behavior.

From a mind-set of	To a mind-set of
Static posture	Dynamic posture for uncertain times
Expecting stability	Expecting change and uncertainty where enhanced situational awareness and properly mapping of the context is crucial
Meeting deadlines and deliver dates at any cost, as the only performance metric	Cost effectiveness of DMPs
Decisions at the scheduled time	Collaborative and iterative strategic decision-making, risk analysis and action against vulnerability
Leadership with a single course of action	Leadership as navigators. Adjust the course as conditions direct
Changing the Mind	Changing the context
Annual management cycle	Iterative management cycle
Static resource allocation	Integrative resource allocation process
Driving control	Driving responsibility

SUGGESTIONS

Our suggestions are:

- ❖ Easy to implement and easy to abandon
- ❖ Agility
- ❖ Small or moderate costs
- ❖ Big impacts
- ❖ Maximising Resources Allocation

CONCLUSIONS



BIG IMPACT

SMALL / ZERO COST

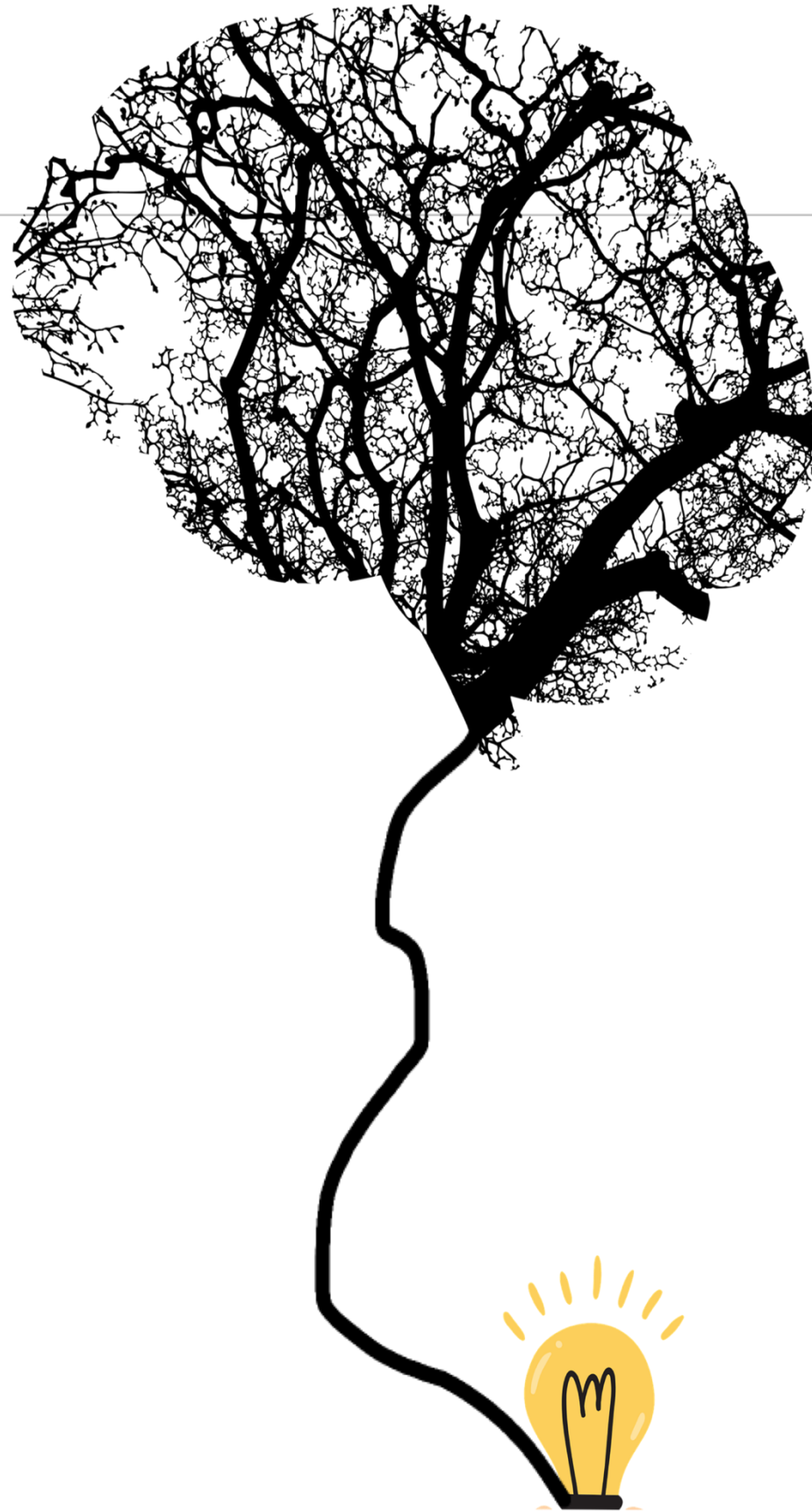
FREEFOM OF CHOICE

EASY TO IMPLEMENT

ETHICS ?



PROPOSALS



AXES

TOP LEVEL AUTHORITY

STRATEGIC DESIGN

REVIEW / INTEGRATION

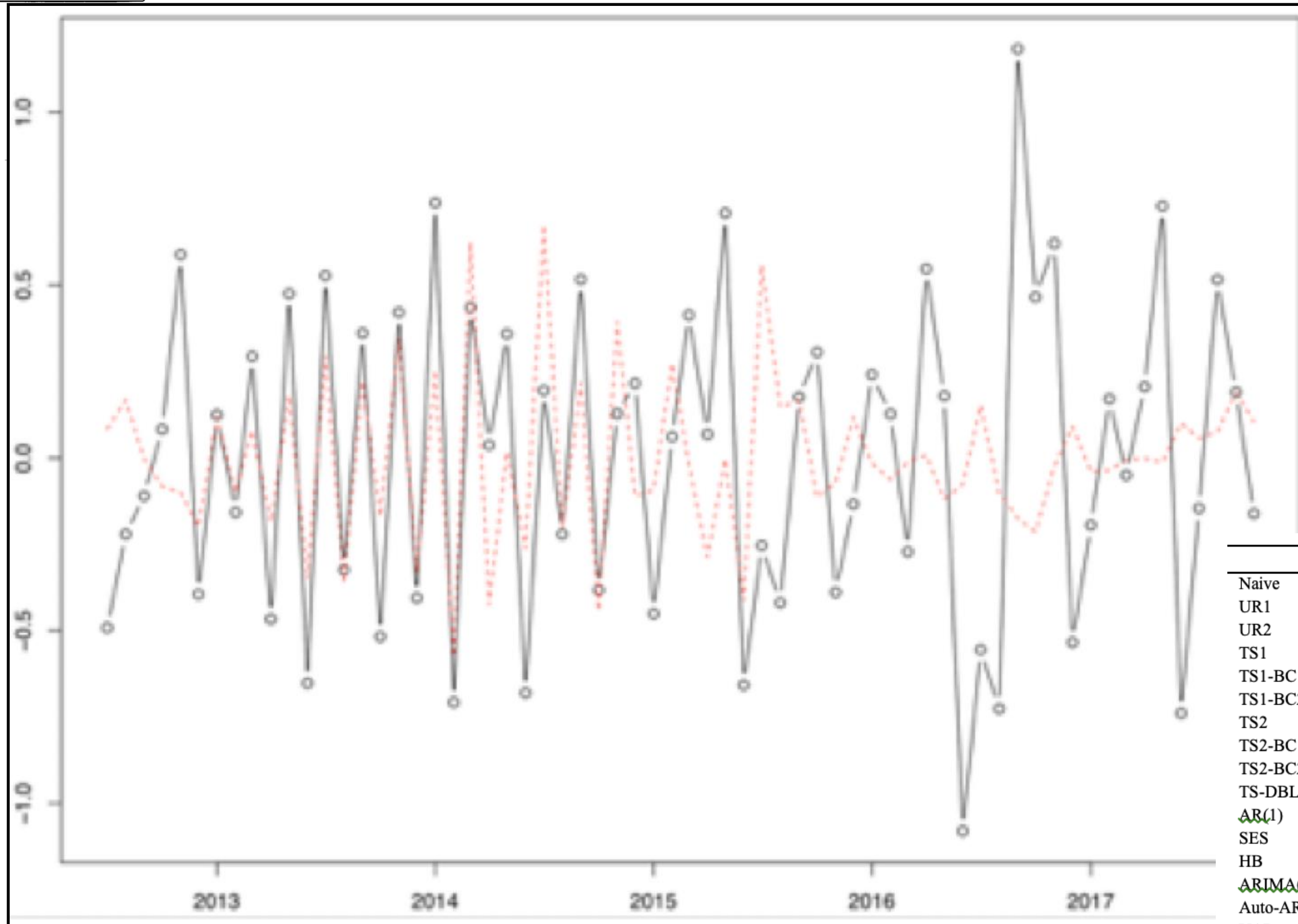
CHOICE ARCHITECTURE

Why NUDGE matters

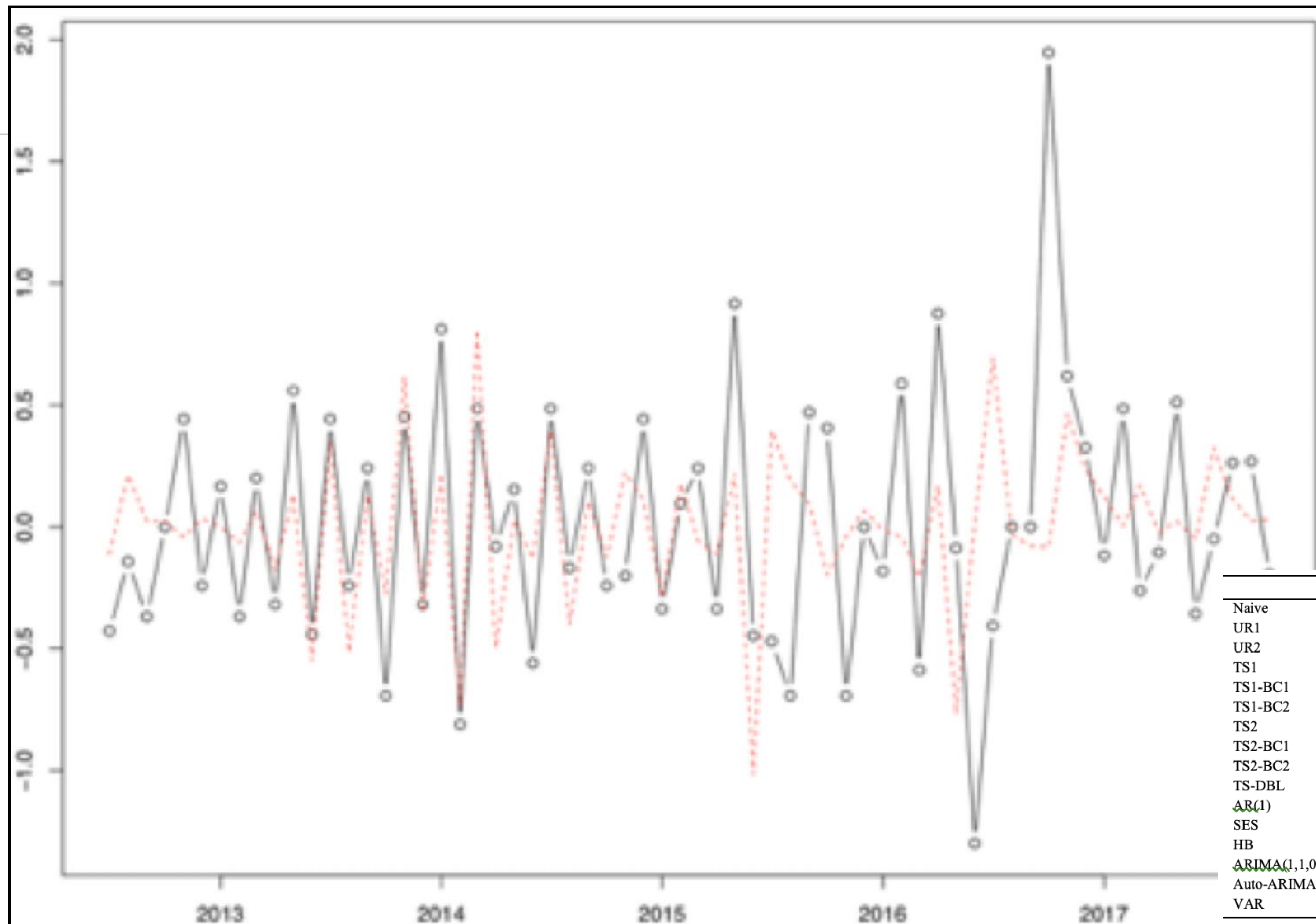
- World not a safe place. From static to dynamic posture.
- Three things needed: Money, money, and yet more money.
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- Moderating on these costs while maintaining operational capabilities results in two-fold gains:
 - ❖ improved decisions and improved morale in the military side
 - ❖ improved security perceptions from the civilian side
- Our suggestions frame the choice context with a formulated model and strategic tool: cost-savings, better outcomes and maximization of the resources' allocation.

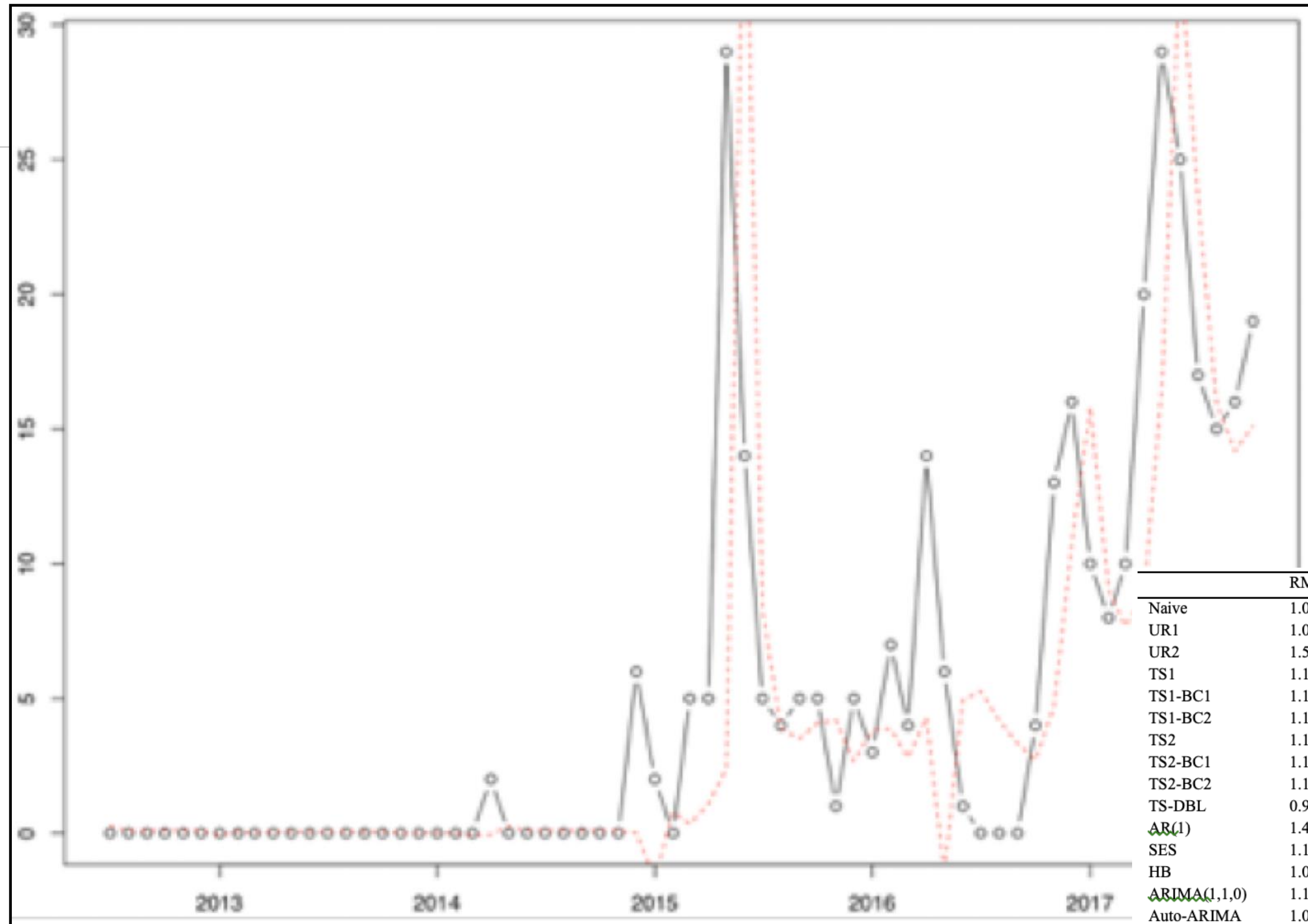


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VAR					



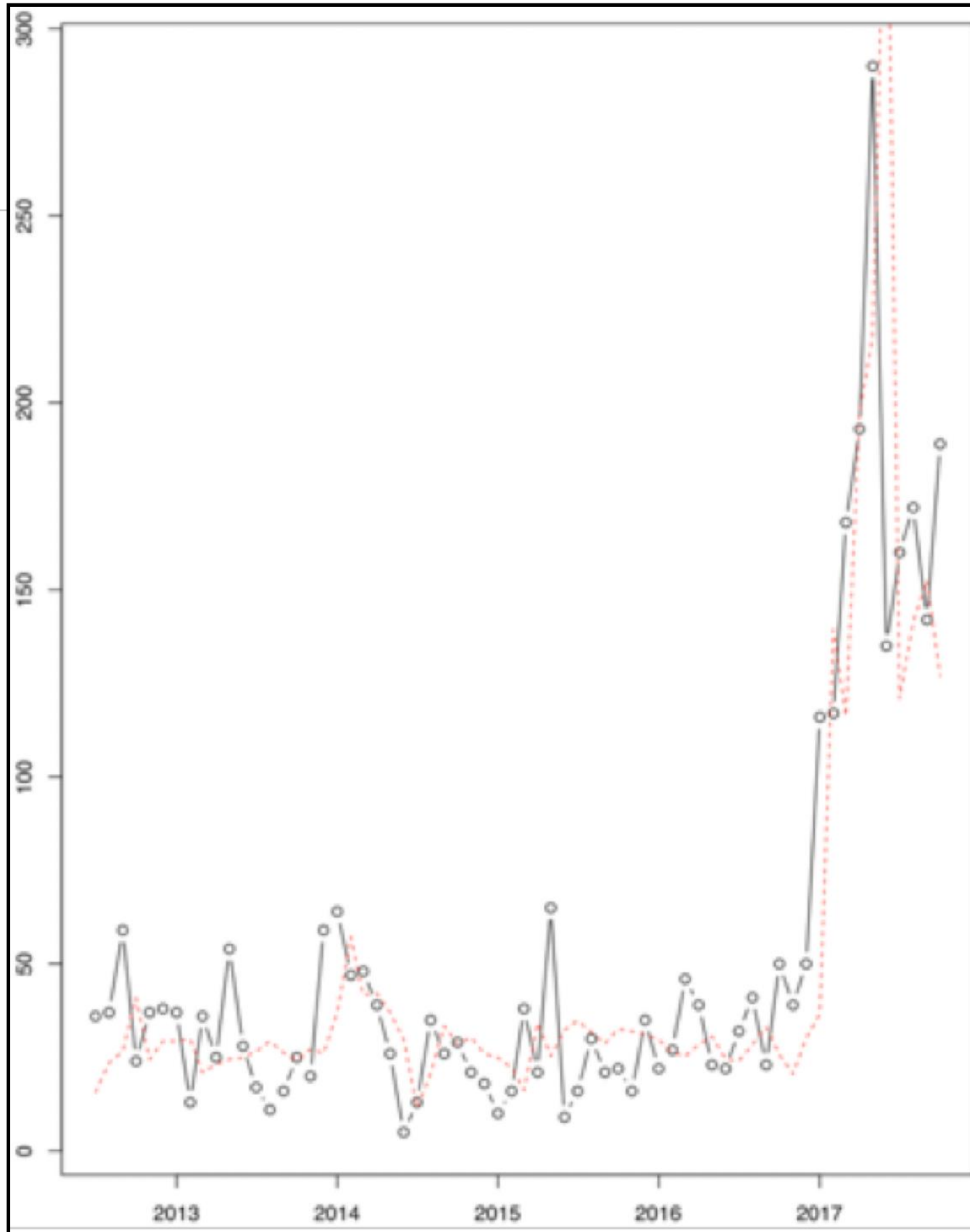
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Naive	1.000	1.000		1.000	0.016
UR1	0.774	0.714	1.232	0.774	0.766
UR2	1.280	1.167	1.896	1.280	0.766
TS1	0.621	0.539	0.830	0.621	0.859
TS1-BC1	0.619	0.537	0.831	0.619	0.859
TS1-BC2	0.621	0.538	0.831	0.621	0.859
TS2	0.926	0.867	0.927	0.926	0.734
TS2-BC1	0.927	0.867	0.928	0.927	0.734
TS2-BC2	0.931	0.868	0.925	0.931	0.734
TS-DBL	1.000	1.001	1.001	1.000	0.547
AR(1)	0.625	0.535		0.625	0.859
SES	0.646	0.600	0.854	0.646	0.859
HB	0.674	0.630	0.832	0.674	0.859
ARIMA(1,1,0)	0.787	0.745	1.151	0.787	0.719
Auto-ARIMA	0.779	0.716	1.235	0.779	0.781
VAR					

Results of exercise AV3.3.30.24
(Armed A/Cs violating FIR Athens)



	RMSE	MAE	U1	U2	SSR
Naive	1.000	1.000		1.000	0.484
UR1	1.062	1.083		1.062	0.562
UR2	1.591	1.624		1.591	0.547
TS1	1.145	1.097		1.145	0.359
TS1-BC1	1.142	1.097		1.142	0.328
TS1-BC2	1.145	1.099		1.145	0.328
TS2	1.134	1.055		1.134	0.359
TS2-BC1	1.132	1.057	1.131	1.132	0.328
TS2-BC2	1.133	1.056	1.123	1.133	0.328
TS-DBL	0.997	1.005	0.992	0.997	0.312
AR(1)	1.438	1.126		1.438	0.703
SES	1.107	1.200	1.153	1.107	0.312
HB	1.094	1.160	1.182	1.094	0.297
ARIMA(1,1,0)	1.111	1.156		1.111	0.375
Auto-ARIMA	1.064	1.083	1.034	1.064	0.250
VAR					

Results of exercise AV4 1 30 24
(Combat Flights)



Plot of Naval Territorial Violations (exercise NV 3 30 24)

	RMSE	MAE	U1	U2	SSR
Naive	1.000	1.000	1.000	1.000	0.000
UR1	0.801	0.809	0.926	0.801	0.719
UR2	1.272	1.258	2.489	1.272	0.719
TS1	0.653	0.642	0.843	0.653	0.797
TS1-BC1	0.651	0.636	0.826	0.651	0.812
TS1-BC2	0.653	0.645	0.851	0.653	0.797
TS2	0.834	0.741	0.898	0.834	0.750
TS2-BC1	0.830	0.736	0.879	0.830	0.781
TS2-BC2	0.832	0.739	0.894	0.832	0.781
TS-DBL	0.997	0.993	0.991	0.997	0.578
AR(1)	0.574	0.572	1.015	0.574	0.781
SES	0.616	0.619	0.996	0.616	0.766
HB	0.636	0.630	0.787	0.636	0.797
ARIMA(1,1,0)	0.793	0.776	1.007	0.793	0.734
Auto-ARIMA	0.812	0.820	0.943	0.812	0.688
VAR					

Results (Forecasting Exercises)

- Four main results:
 - ❖ Changes exhibit high predictability, before the Catalyst.
 - ❖ High predictability is suggestive of how one can incorporate the results in the decision making plan.
 - ❖ Where the pattern appears to be breaking up, one can consider intervention analysis (part of future research).
 - ❖ Data on two periods can be used to construct methods/models for forecasting under different scenarios.

Conclusions

- Nudge offers an **alternative to conventional** approaches and **contribute to a wide range** of defense sector (strategic, operational and tactical level).
- The forecasting model may bring accurately **predefined targets and defaults** for all incidents.
- If the forecast fails, then may follow the business as usual protocol. **Work backward**, analyse and **re-run** the model for better outcomes.
- Methodology may **break the routine behavior** and **work as a reminder** concerning the possible gains and losses.

From a mind-set of	To a mind-set of
Static posture	Dynamic posture for uncertain times
Expecting stability	Expecting change and uncertainty where enhanced situational awareness and properly mapping of the context is crucial
Meeting deadlines and deliver dates at any cost, as the only performance metric	Cost effectiveness of DMPs
Decisions at the scheduled time	Collaborative and iterative strategic decision-making, risk analysis and action against vulnerability
Leadership with a single course of action	Leadership as navigators. Adjust the course as conditions direct
Changing the Mind	Changing the context
Annual management cycle	Iterative management cycle
Static resource allocation	Integrative resource allocation process
Driving control	Driving responsibility

Proposals

Our suggestions are:

- ❖ Easy to implement and easy to abandon
- ❖ Agility
- ❖ Small or moderate costs
- ❖ Big impacts
- ❖ Maximising Resources Allocation

CONCLUSIONS



BIG IMPACT

SMALL / ZERO COST

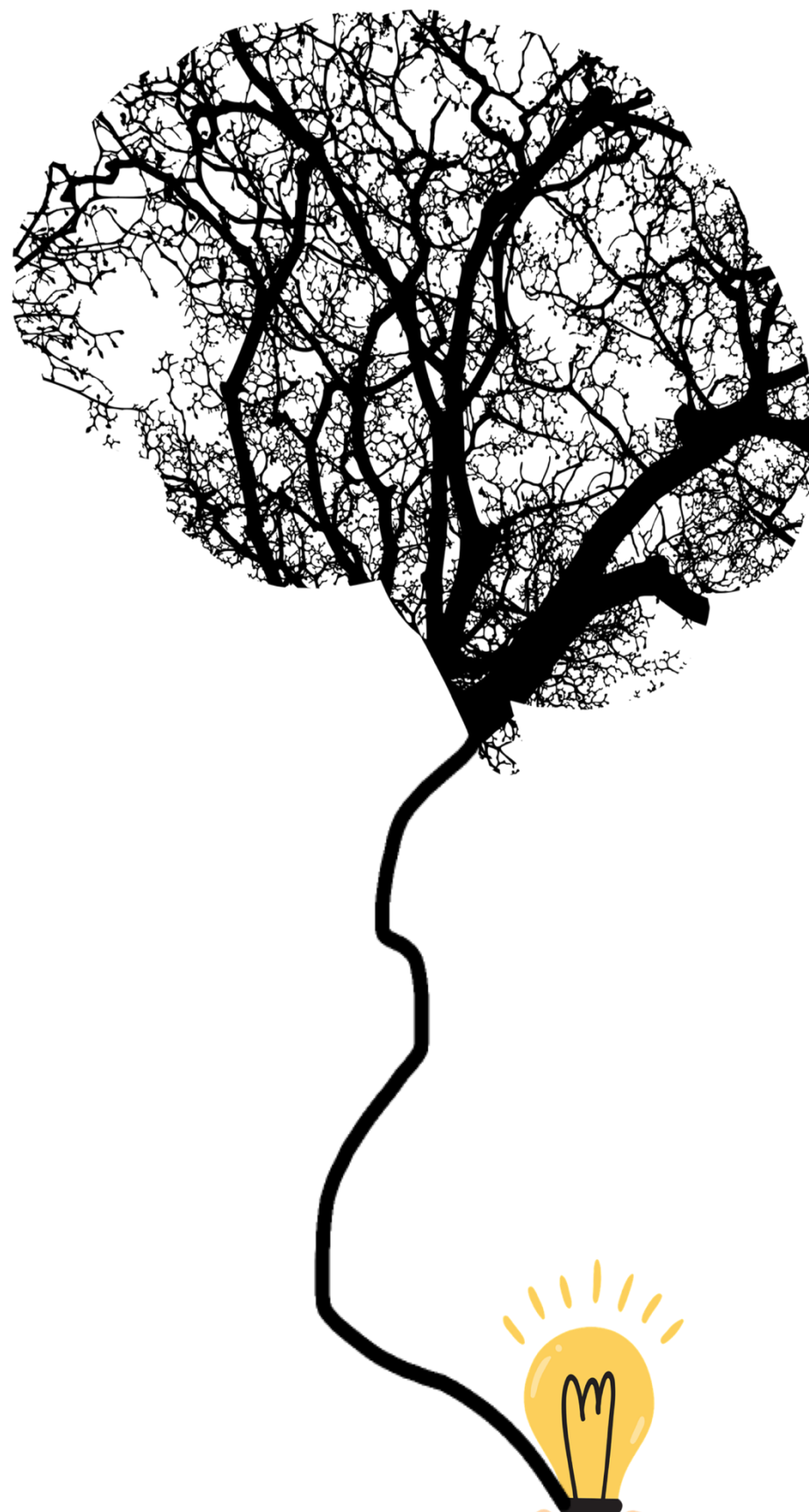
FREEFOM OF CHOICE

EASY TO IMPLEMENT

ETHICS ?



PROPOSALS



AXES

TOP LEVEL AUTHORITY

STRATEGIC DESIGN

REVIEW / INTEGRATION

CHOICE ARCHITECTURE

Reaching a Peaceful End...Time for Party

“To every thing there is a season and a time to every purpose...”

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