What can we learn from behavioral economics to shape healthcare policy?

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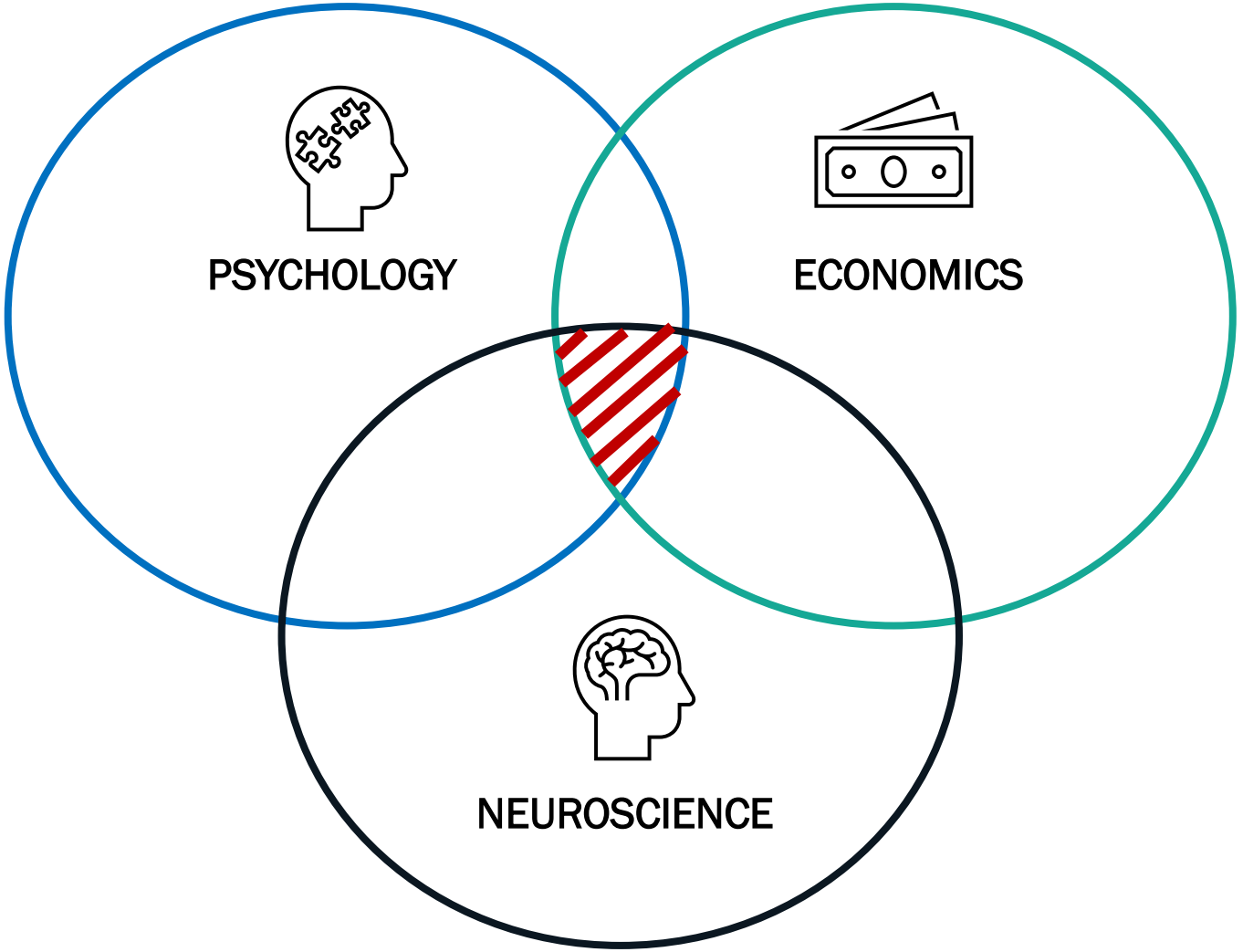
HICT

“Behavioral economics is a mixed discipline, covering insights from economics, psychology, and neuroscience.”



Kahneman, D. A psychological perspective on economics. Am Econon Rev. 2003.

Neoclassical economics

Assumptions:

- *Consistently* rational
- Context-independent
- Stable over time

Behavioral economics

Deviation of these assumtions:

- *Bounded* rationality
- Context matters
- Time inconsistent

Kahneman, D. et al. Prospect theory: An analysis of decision under risk. In Handbook of the fundamentals of financial decision making: Part I. 2013.

Behavioral biases	Definition
Loss aversion	People are more motivated to avoid losses than to achieve similarly sized gains.
Social norms	Our behavior is influenced by that of our peers.
Defaults	People have the tendency to stick to the default option and choose the path of the least resistance, rather than changing to a better alternative.
Present bias	We tend to prefer short-term benefits over long-term benefits.
Framing	Our decisions are influenced by how the options are presented.
Availability	People assess the probability of a particular phenomenon occurring based on how quickly one can recall a similar event.

Loss aversion

People are more motivated to avoid losses than to achieve similarly sized gains.

Losing what you already have	>	Gaining what you do not yet have

Example: Increasing daily step count

- **Group 1 (gain-group):** 1.4 € each day 7000 steps was reached for one month
- **Group 2 (loss-group):** 42 € given, minus 1.4 € each day 7000 steps was not reached

Max 42 €

Result:

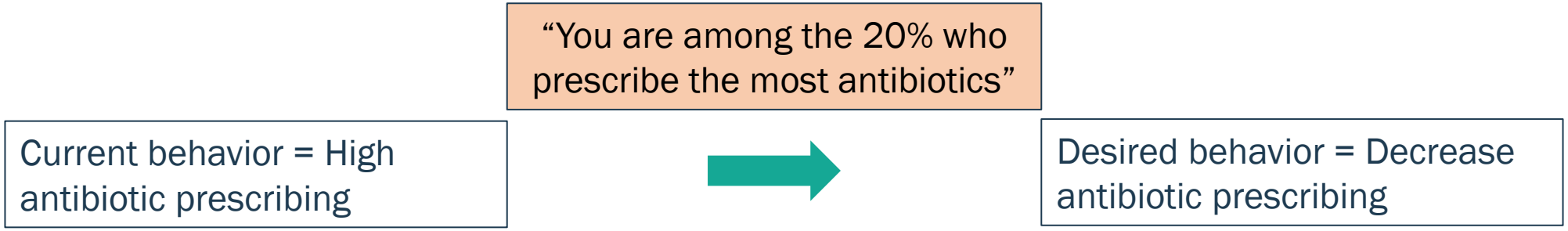
Significantly higher chance to achieve the step goal in the loss-group

Kahneman, D. et al. Prospect theory: An analysis of decision under risk. In Handbook of the fundamentals of financial decision making: Part I. 2013.

Social norms

Our behavior is influenced by that of our peers. We tend to mirror the behavior of the people in our environment.

Example: Decrease antibiotics prescribing

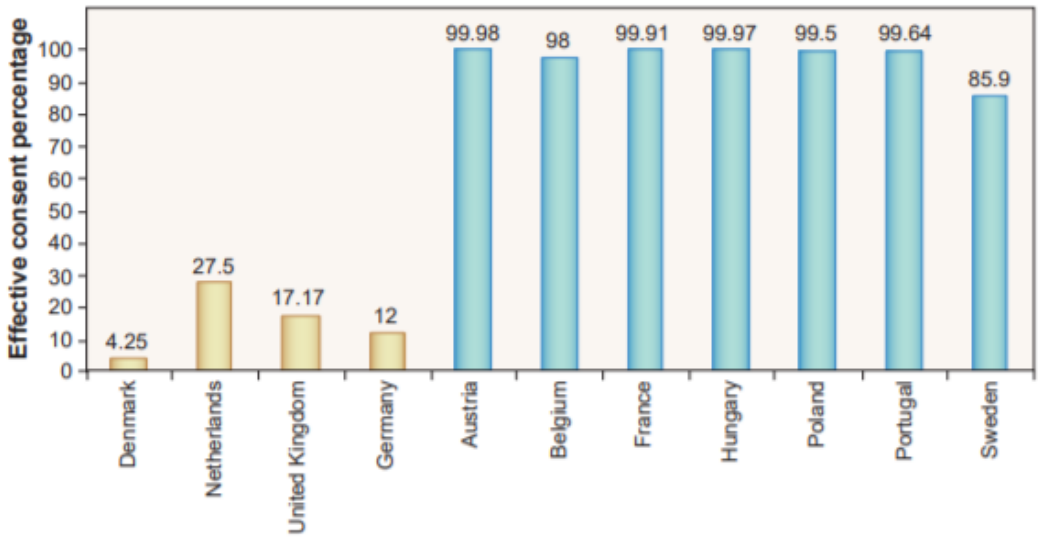


In a period of six months, the rate of antibiotics dispensed per 1000 population was 126.98 (95% CI 125.68–128.27) in the feedback intervention group and 131.25 (130.33–132.16) in the control group, a difference of 4.27 (3.3%; p<0.0001), representing an estimated ***73 406 fewer antibiotics dispensed.***

Hallsworth, M. et al. Provision of social norm feedback to high prescribers of antibiotics in general practice: a pragmatic national randomized controlled trial. Lancet. 2016.

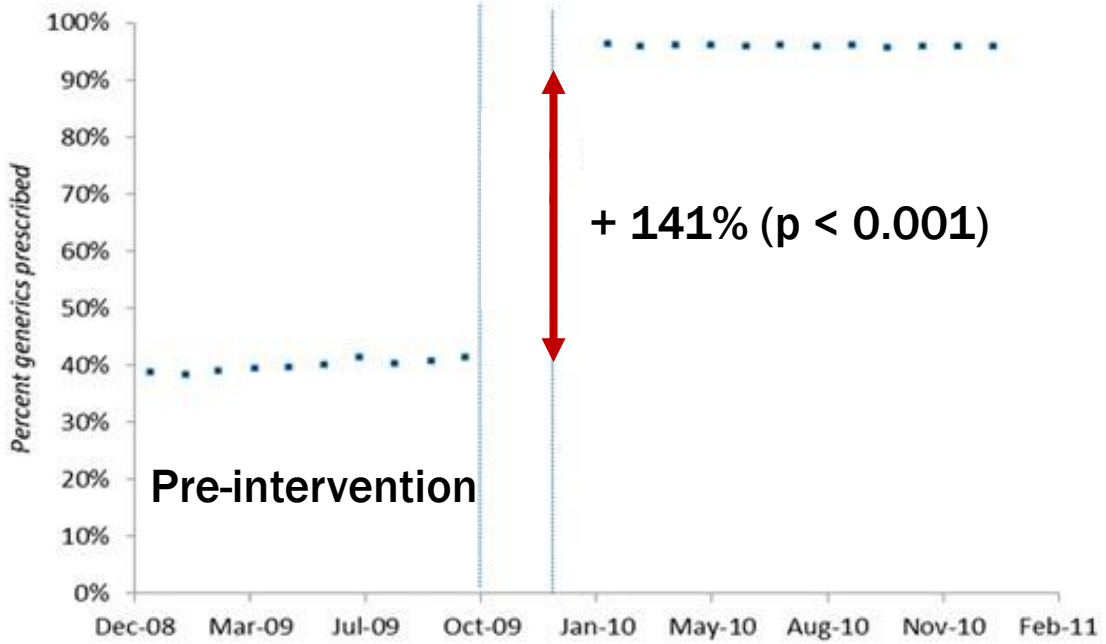
Defaults

People have the tendency to stick to the default option and choose the path of the least resistance, rather than changing to a better alternative.



Effective consent rates, by country. Explicit consent (opt-in, gold) and presumed consent (opt-out, blue).

Post-intervention



Johnson, E. J. et al. Do Defaults Save Lives? Science. 2003.
Malhotra, S. et al. Effects of an e-prescribing interface redesign on rates of generic drug prescribing: exploiting default options. J Am Med Inform Assoc. 2016.

Present bias

Present bias or hyperbolic discounting is the nonlinear and nonconstant tendency of individuals to prefer a smaller sooner pay-off over a larger future pay-off.

Smaller immediate pay-off	**>**	**Larger future pay-off**

Example: Unhealthy behavior (e.g., smoking)

- Drawbacks are immediate
- Rewards only on the longer term

Short-term efforts (quitting smoking) outweigh large long-term rewards (longer life expectancy)

Barlow, P. et al. Unhealthy diets, obesity and time discounting: a systematic literature review and network analysis. Obesity Reviews. 2016.

Framing

Our decisions are influenced by how the options are presented. Even if both options are equivalent.

Which treatment would you choose?

Treatment A	“The treatment saves 200 out of 600 lives"
Treatment B	“The treatment causes 400 out of 600 people to die"

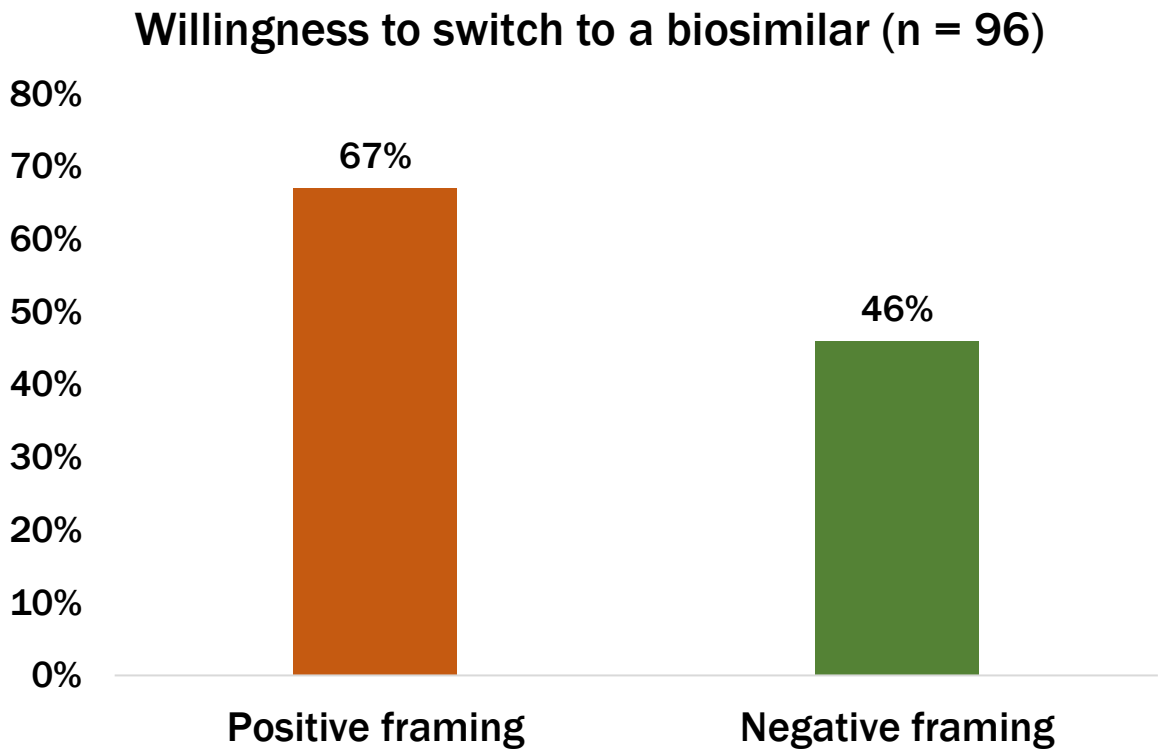
Tversky, A. et al. The Framing of decisions and the psychology of choice. Science. 1981.

Framing

Example: Biosimilars

"Biosimilars have the **same clinical outcomes** compared to their reference product"

"Biosimilars have **no clinically meaningful differences** compared to their reference product"



Patients were 2.36 times more willing to switch (P = 0.041) to a biosimilar.

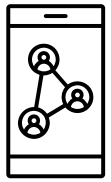
Gasteiger, C. et al. The effects of message framing on patients' perceptions and willingness to change to a biosimilar in a hypothetical drug switch. Arthritis Care Res. 2019.

Availability

We tend to overestimate the occurrence of events that are noticeable (more extreme) or *salient*.

Salience refers to people being influenced in their decisions by new and visible events.

Example: COVID-19 vaccination



1. Overestimation of the probability of rare serious events
2. Leading to reluctance to get vaccinated in certain areas

Soofi, M. et al. Using insights from behavioral economics to mitigate the spread of COVID-19. Applied health economics and health policy. 2020.

Applications of behavioral economics to healthcare policy

Neoclassical economics

- ✓ Stable over time
- ✓ Consistently rational
- ✓ Context-independent

Shaping policy strategies

Limitations?

THE BEHAVIOURAL INSIGHTS TEAM

In partnership with

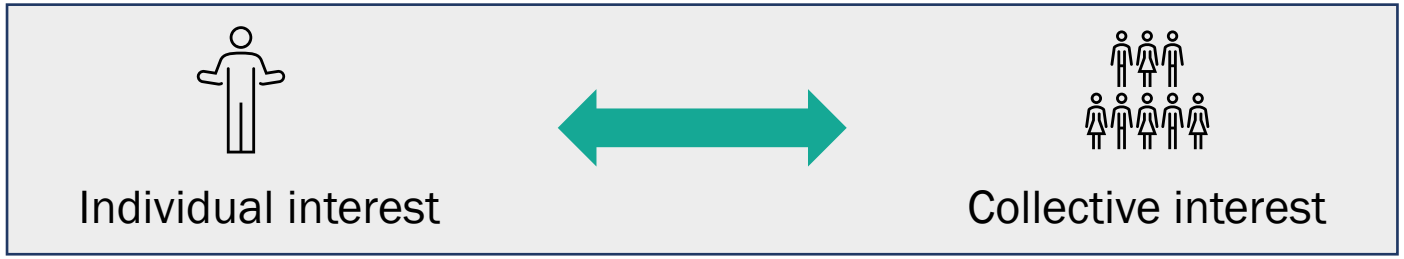
Cabinet Office

sbst

SOCIAL AND BEHAVIORAL SCIENCES TEAM

Applications of behavioral economics to healthcare policy

Problem:



Behavioral economics can help to:

1. Better understand underlying drivers
2. Shape choice architecture to align individual with collective interests (nudging)

Vallgårda, S. Nudge: a new and better way to improve health? Health Policy (New York). 2012.

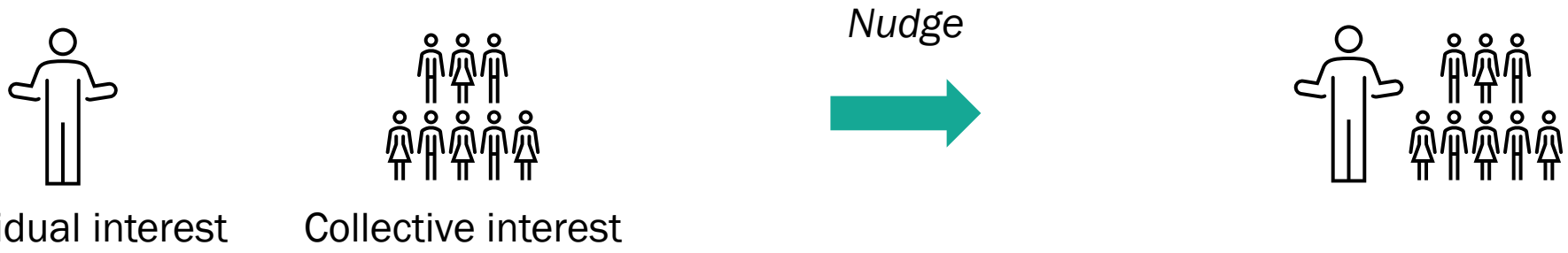
Applications of behavioral economics to healthcare policy

1. Understand underlying drivers (why):

Behavioral biases help to understand decision-making processes.

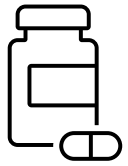
2. Nudges (how):

Changing the choice architecture in a subtle way, creating **nudges** to steer our behavior to align with the collective interest.

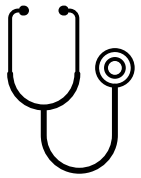


Evidence in pharmaceutical contexts

Areas where behavioral concepts have been researched:



Medication adherence



Prescribing behavior

Vaccination uptake

Conclusions:

- Evidence is promising, yet depending on the behavioral concept
- Rigorous testing in a research context is required

Vandenplas, Y. et al. Applications of Behavioral Economics to Pharmaceutical Policymaking: A Scoping Review with Implications for Best-Value Biological Medicines. Appl Health Econ Health Policy. 2022.

Limitations and pitfalls

1

Ethical and in line with collective interest

Make sure the intended behavior is in line with societal interest and does not undermine individual freedom.

2

Thin line between libertian paternalism and paternalism

“The government knows best what we should do”

3

Behavioral economics and traditional economics go hand in hand

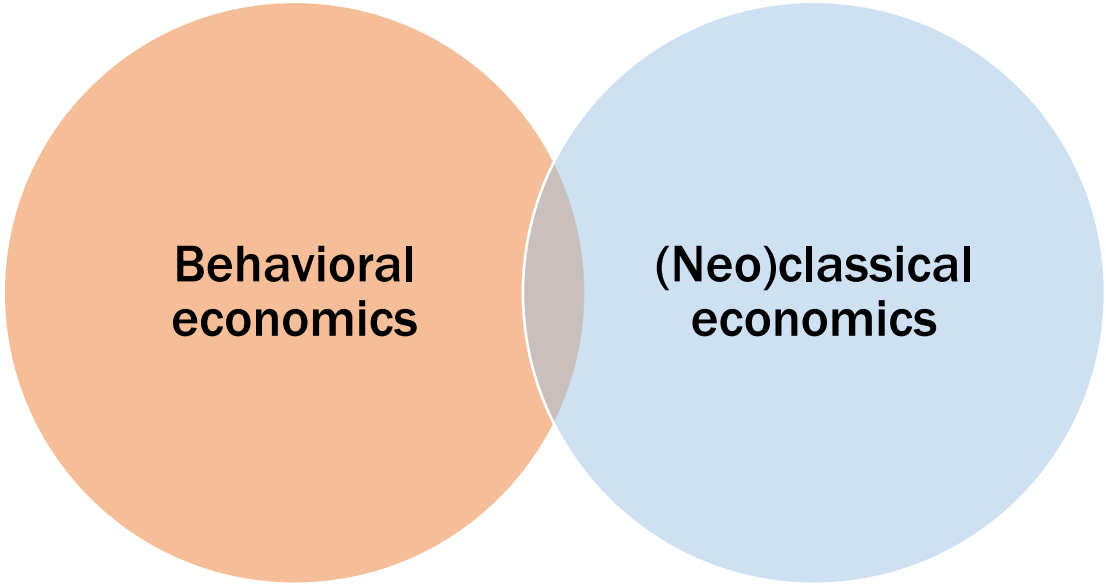
Behavioral-based interventions should be seen as an extra layer to increase the impact of existing interventions based on traditional economics, not as a substitute.

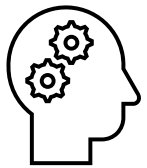
4

Scarcity of scientific evidence of behavioral applications in policy contexts

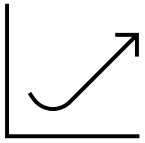
Understand the underlying drivers + the effect of a possible intervention.

Matjasko, J. et al. Applying behavioral economics to public health policy: illustrative examples and promising directions. American journal of preventive medicine. *2016.*





Understand underlying drivers



Ameliorate existing policy strategies (nudges)

Carefully evaluate in a research context

Thank you for your attention!

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