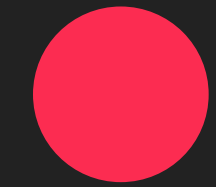




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A view from the outside looking in
The background to behavioural economics and some
applications beyond ATM

Madrid, November 2019



Overview of Behavioural Economics.

Behavioural Economics.

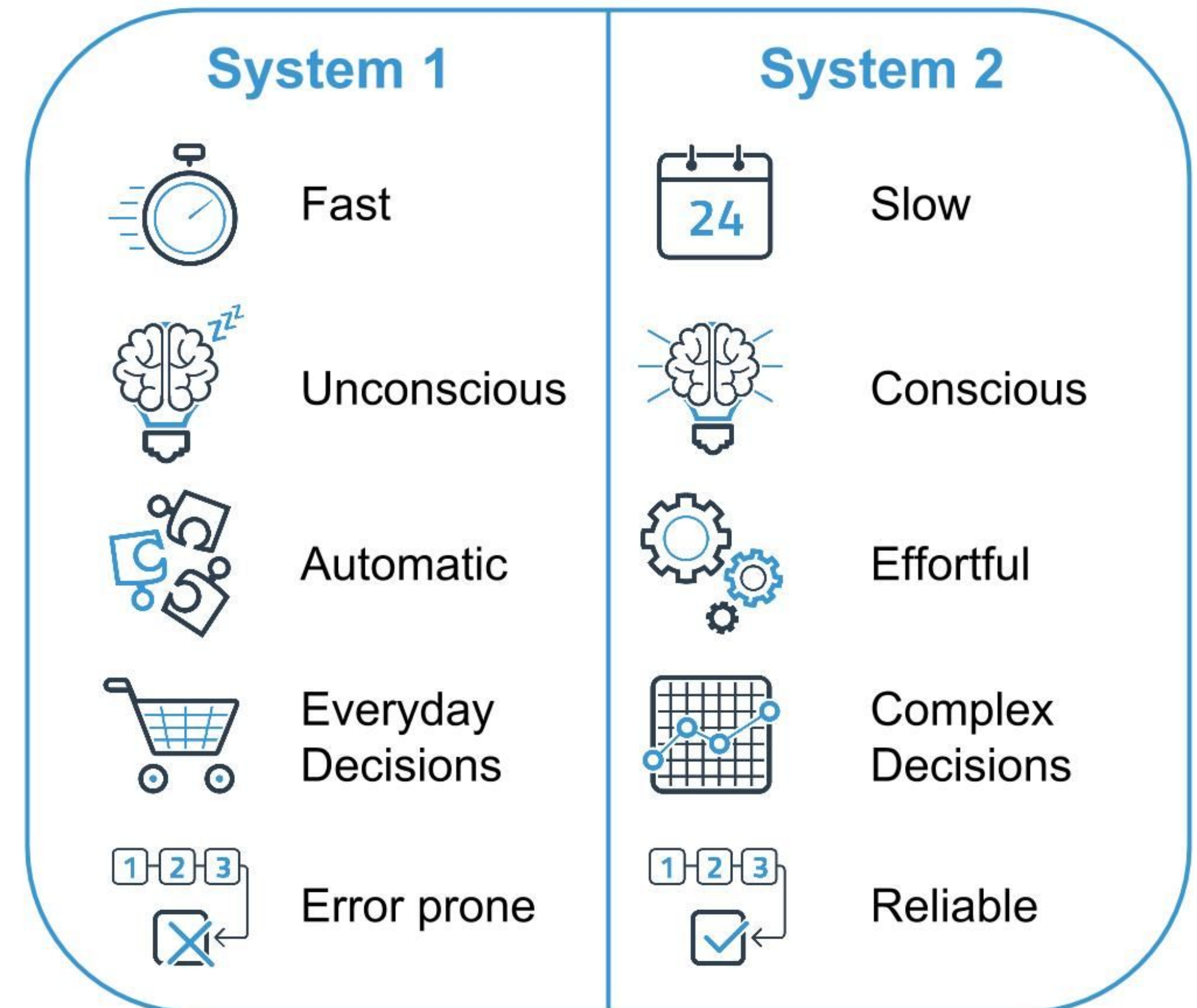
- Inter-disciplinary field drawing from psychology, economics and decision sciences helping to understand, predict, and ultimately influence behaviour and decision-making in an impactful way
- Assumptions about human rationality, utility maximisation and perfect information are often violated in reality
- Looks at the frequent deviations from rational decision-making
- We all have to take mental shortcuts and use heuristics as cognitive resources are scarce. Resulting biases and heuristics can lead to suboptimal decision-making

35,000

**Number of
decisions an adult
makes per day.**

Cognitive Capacity.

- The human mind is very complex. *Dual-process theory* helps us to better understand the decision making process
- Our cognitive capacity is limited and we make use of two interrelated 'systems' often called System 1 and System 2 to make decisions
- As a result we do not fully weigh up our choices at all times, we take mental shortcuts, are biased and can act **arationally**



Klein versus Kahneman.

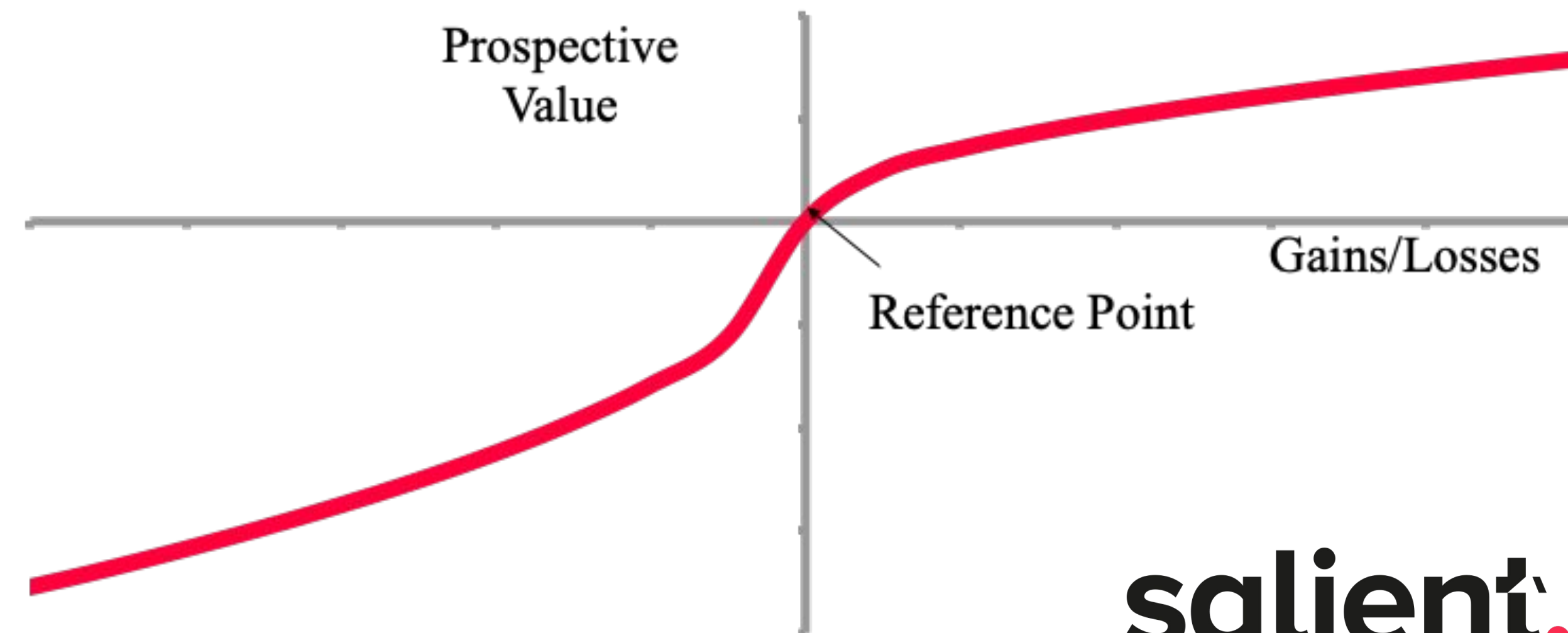
- There are two important approaches to intuition and expertise, often viewed as conflicting but both starting from the observation that intuition is sometimes marvelous and at other times flawed:
 - Heuristics and biases (Kahneman)
 - Naturalistic decision making (Klein)
- Klein's approach focusses on the successes of (expert) intuition
 - Professional chess player or firemen
 - Crossing the street and intuitively judging the time it will take for the traffic to arrive
- Kahneman's approach favors a skeptical attitude toward expertise and (expert) judgment

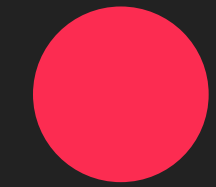
“People think about life in terms of **changes**, not levels. They can be changes **from the status quo or** changes from **what was expected**, but whatever form they take, it is changes that **make us happy or miserable.**”

- *Richard H. Thaler*

Prospect Theory.

- *Prospect theory* was developed by Kahneman and Tversky (1979) to describe decision-making under uncertainty
- There are four distinguishing features compared to standard utility theory:
 - Weights assigned to outcomes differ from objective probabilities (people tend to overweight low probabilities and underweight high ones)
 - Losses loom much larger than gains – about twice as much (loss-aversion)
 - Risk-aversion in the gain domain and risk-seeking in the loss domain
 - Reference point dependent - often the status quo
- Related biases include:
 - Loss-aversion
 - Endowment effect
 - Disposition effect



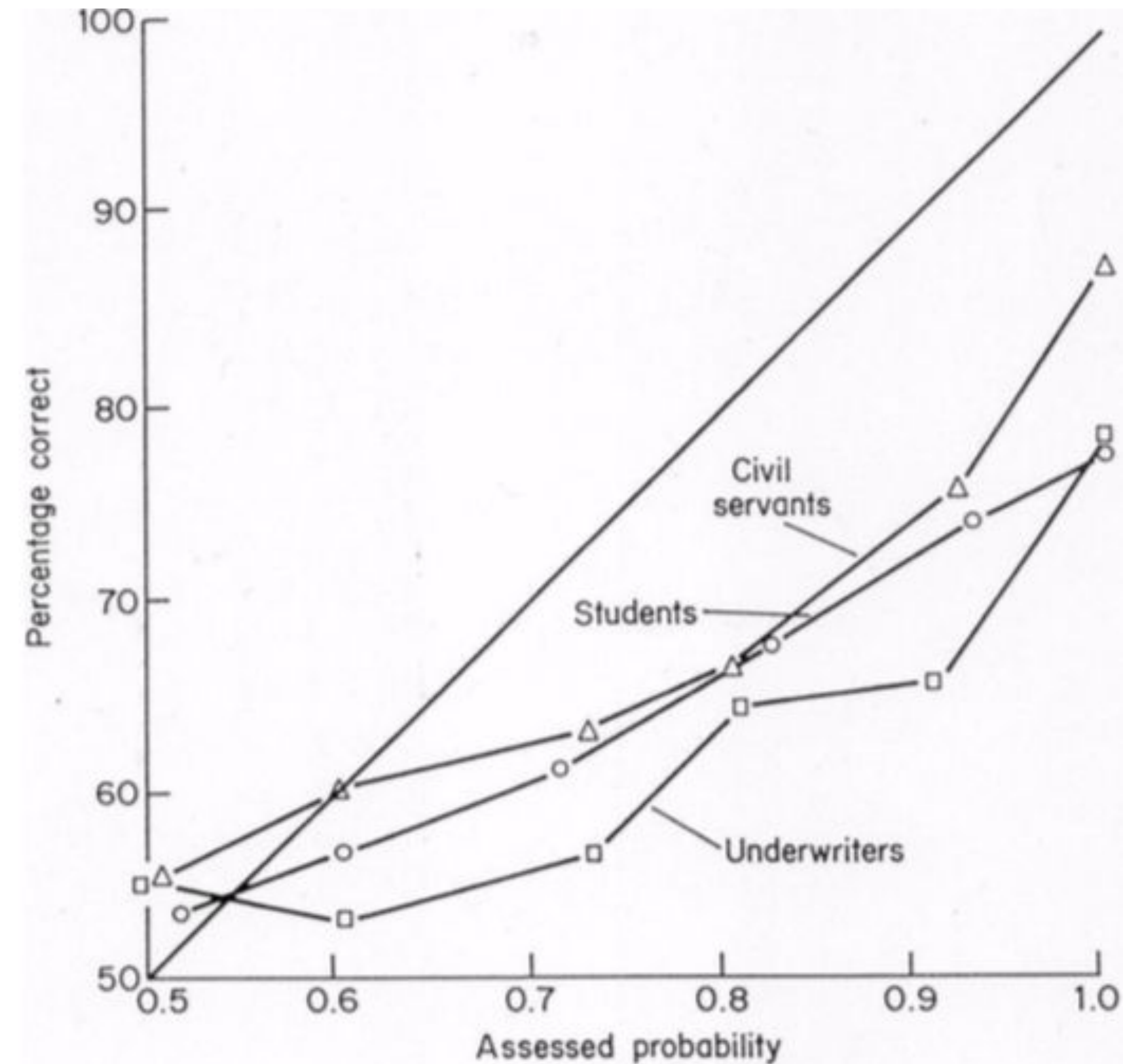


Influences on Our Decision Making.

Overconfidence.

- Overconfidence is widespread and can be divided into overconfidence in one's ability and overconfidence in the accuracy of one's knowledge:
 - Driving skills
 - 80% believe to be above median drivers
 - Accuracy of knowledge
 - 90% confidence intervals for knowledge questions, turn out to be 40% confidence
- Promising debiasing techniques include:
 - Statistical recalibration
 - Red teaming
 - Pre-mortem

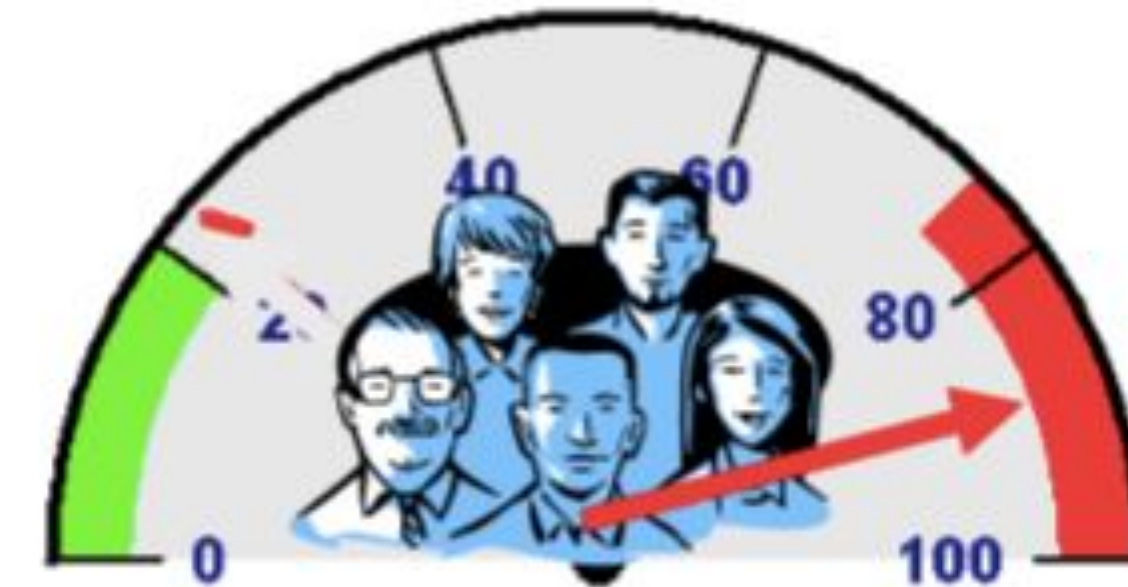
Source: Fisher, Slovic and Lichtenstein (1977)



Four Conflicting Process Goals.



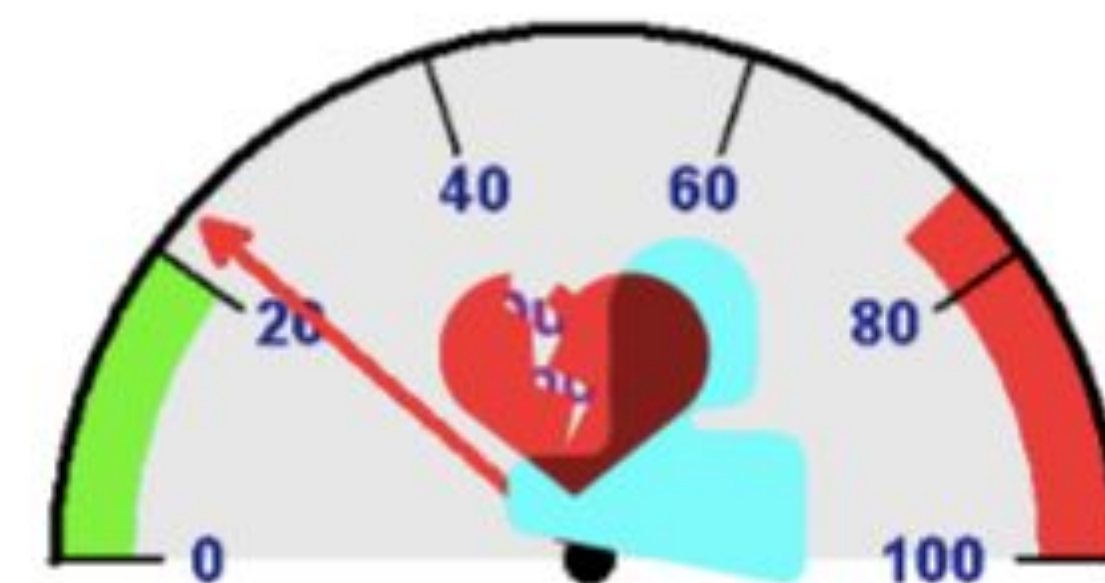
Maximise accuracy



Maximise transparency
(easy to defend and explain)



Minimize effort



Minimize emotional strain



Source: Adapted from Fasolo (2017)

Choice Heuristics.

- Imagine you have an important decision to make and you evaluate the different options across a number of criteria
- How do we decide which option is ‘best’?
 - Pick the option which is best based on the single most important feature (Lexicographic)
 - Establish a threshold for each criterion, then consider one option at a time and pick the first option that satisfies all thresholds across the different criteria (Satisficing)
 - Establish a threshold for each criterion, then eliminate all the options that do not meet the threshold and pick the only ‘survivor’ of the elimination rounds (Eliminating by Aspect)
 - Add up all pros and cons for each option and then choose the option with highest sum (Additive, ‘Econ-like’)
- Decision taken can vary hugely depending on the process taken

The Israeli Judge Study.

- A study in Israel looked at the likelihood of parole being granted as a function of time of day
- A clear pattern emerged where the likelihood of parole being granted was highest in the early morning and then right after longer breaks
- The hypothesis is that judges experience *ego depletion* and go with the 'easy' (default) option of not granting parole
- Recent criticism suggests that not ego depletion but other factors that the study did not account for explain this behaviour
- Likely, the 'real' reason is a combination of ego-depletion and other factors but it highlights the importance of robust study and experiment design

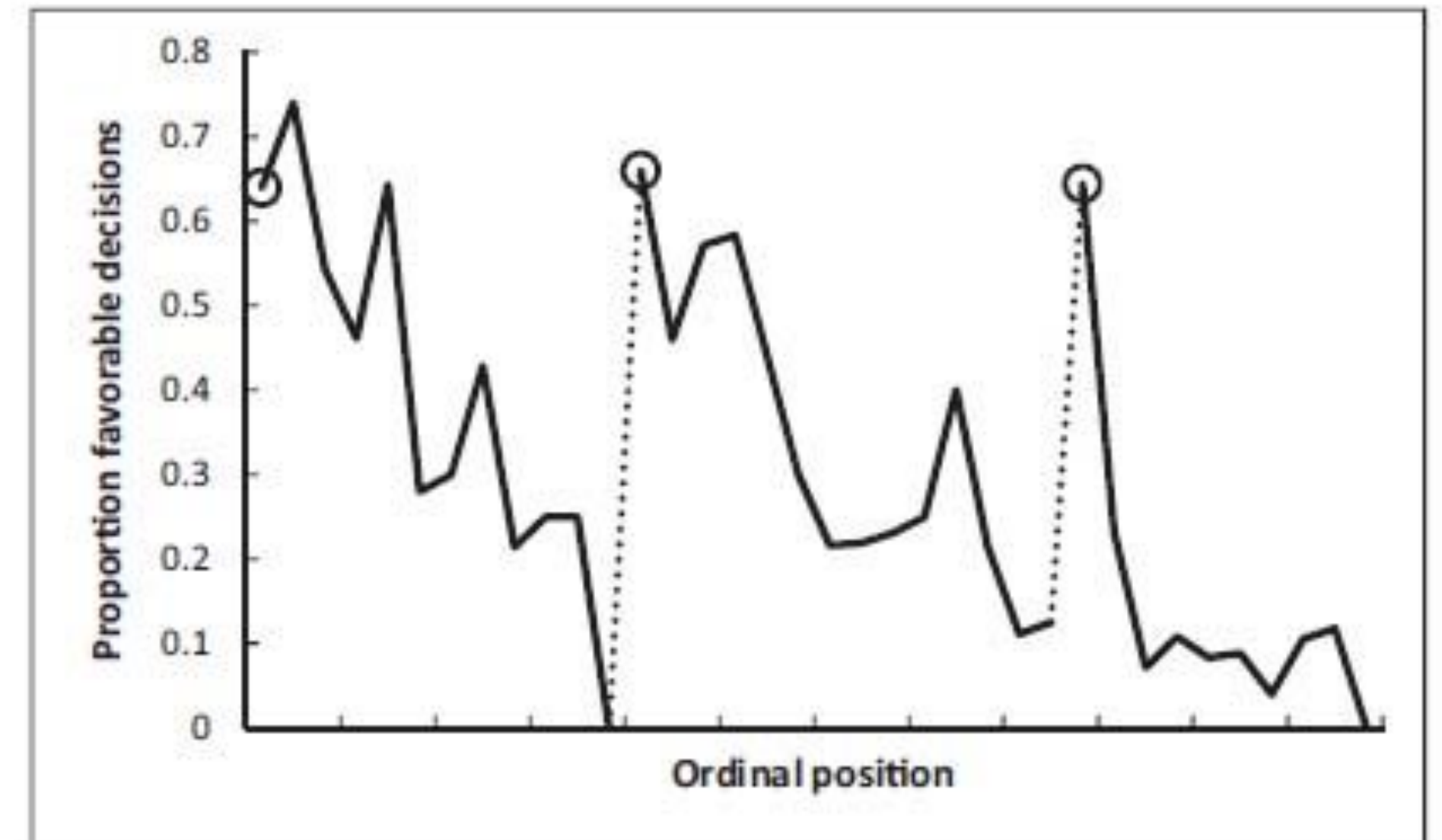


Fig. 1. Proportion of rulings in favor of the prisoners by ordinal position. Circled points indicate the first decision in each of the three decision sessions; tick marks on x axis denote every third case; dotted line denotes food break. Because unequal session lengths resulted in a low number of cases for some of the later ordinal positions, the graph is based on the first 95% of the data from each session.

Source: Danziger, Levav and Avnaim-Pesso (2011)



Applications of Behavioural Economics.



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Applications of Behavioural Insights.

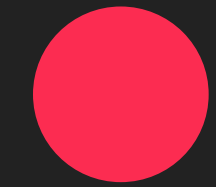
- Public policy
 - Using social norms to increase tax compliance
 - Personal finance: helping people to save more for their retirement
- Health
 - Reducing missed doctor appointments
 - Increase the uptake of diabetes prevention programs
- Private Sector
 - Increasing diversity and inclusion as well as employee engagement
 - Increase profitability, e.g. in a trading context

Nudges in Everyday Situations.



High Risk Situation.





MINDSPACE - A Checklist for Behavioural Interventions.

Designing an Intervention.

M essenger	We are heavily influenced by who communicates information to us
I ncentives	Responses to incentives are shaped by mental shortcuts e.g. avoiding losses
N orms	We are strongly influenced by what others do
D efaults	We 'go with the flow' of pre-set options due to inertia
S alience	Our attention is drawn to what is novel and relevant to us
P riming	Our behaviour is influenced by sub-conscious cues
A ffect	Emotional associations can powerfully shape our actions
C ommitment	We seek to be consistent with our public promises and reciprocate acts
E go	We act in ways that make us feel better about ourselves

Dolan, Paul & Hallsworth, Michael & Halpern, David & King, D & Metcalfe, R & Vlaev, Ivo. (2012). Influencing behavior: The mindspace way. Journal of Economic Psychology. 33. 264–277. 10.1016/j.joep.2011.10.009.

Messenger and Incentives.

- Messenger
 - People tend to be much more likely to act if the messenger has similar characteristics to themselves
 - Feelings for the messenger play an important role, we might even discard good advice from a person because we do not like them.
 - Example: *Get braids not AIDS* - hairdressers in Zimbabwe as a trusted messenger for the use of female condoms
- Incentives
 - Responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses and we care about changes rather than levels
 - Using framing it is possible to change the reference point,
 - Example: Students asked how much they are willing to pay (WTP) to increase holidays from two to four weeks; another group how are willing to accept (WTA) for a reduction from four weeks to two weeks
 - The median WTP was \$6,000 and the median WTA was \$13,000
 - Effects of incentives depend on their design, the form they are given (especially monetary or nonmonetary), how they interact with intrinsic and social motivation (e.g. blood donation), and what happens after they are withdrawn.

Norms and Defaults.

- Norms
 - We are highly influenced by what people around us do and takes cues from them
 - Partly conscious as conformity may be a deliberate strategy, giving pleasure from choosing to behave like everyone – even though this might not maximise overall utility
 - Descriptive norms can backfire when people hear that others behave worse
 - Example: Reduction of energy consumption
- Defaults
 - Individuals regularly accept whatever the default setting is
 - Default setting might be interpreted as suggest what is most appropriate
 - Switching from defaults could bear some expenses (not necessarily of monetary nature e.g. paperwork or cognitive effort. This effort is required immediately and the benefits are delayed (present-bias)
 - Example: Automatic enrollment into pension contributions for employees

Salience and Priming.

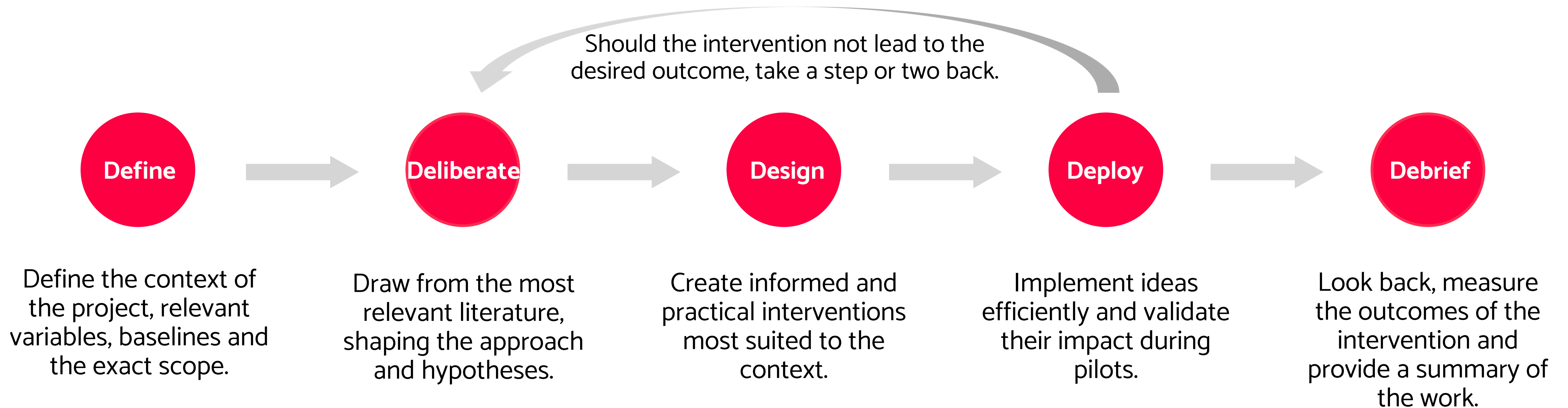
- Salience
 - People are more likely to register stimuli that are novel, accessible and simple
 - Behaviour is greatly influenced by what our attention is drawn to. People are much more likely to register stimuli that are:
 - Novel: Messages in flashing lights
 - Accessible: Items on sale next to the checkout counter
- Priming
 - Priming (or activation of any sort) of knowledge in memory makes it more accessible and therefore more influential in processing new stimuli
 - Behaviour may be altered if exposed to certain sights, words or sensations
 - Words: even by asking people what they intend to do
 - Sights: subliminal presence of happy face while drinking causes them to drink more, size of food containers primes subsequent eating
 - Smells: exposure to scent of all purpose cleaner led to people keeping their table clean

Affect, Commitment and Ego.

- Affect
 - Affect (the act of experiencing emotion) is a powerful force in decision-making and emotional responses to words, images and events can be rapid and automatic
 - Including a picture of an attractive, smiling female increased demand for the a financial product by the same amount as a 25% decrease in the loan's interest rate
- Commitment
 - Saying or writing something can be effective in increase the likelihood of us actually following through, especially when we make public commitments
 - Exploits time inconsistent preferences in particular present-bias
 - How many times have we decided to go to the gym tomorrow - only to realise after a week that we are still waiting for tomorrow to come without having been to the gym a single time
- Ego
 - We tend to behave in a way that supports the impression of a positive and consistent self-image
 - When things go well in our lives, we attribute it to ourselves; when they go badly, it is the fault of other people or the situation we were put in (fundamental attribution error)

Salient 5D Project Framework.

- Our five stage project framework allows us to incorporate scientific rigour into our work to deliver actionable insights and create impactful solutions:



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