

# BIASES IN THINKING AND DECISION MAKING

## System 1 and System 2 thinking

**Heuristics:** cognitive shortcuts or simplified strategies used by people.

- Lead to cognitive biases.



saving.....

### Advantages:

- ↳ save energy as there is no need to analyse all options meticulously.
- ↳ they are based on experiences which might mean that if it has worked before, it will work again.

Daniel Kahneman in 2003

- ↳ Proposed an extension to the information-processing approach.
- ↳ Identified two independent systems - system 1 and system 2.



### SYSTEM 1:

- fast
- instinctive
- emotional
- automatic
- relatively unconscious

### SYSTEM 2:



- slower
- analytical
- logical
- rule-based
- conscious

### System 1:

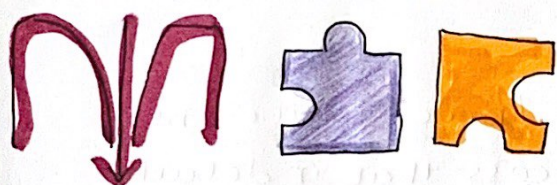
- ↳ developed as an adaptive reasoning mechanism which is based on prior experiences.
- ↳ enables us to make fast and sometimes reasonable choices that have worked in the past.



## System 2:

↳ evolved later with the development of language & abstract reasoning.

↳ helps us analyse a situation in greater depth.



System 1 is used in majority of the situations but we switch to system 2 when

the situation is complicated or when we encounter difficulties.

The study of heuristics and biases are generally associated with system 1.

### Common causes of intuitive thinking

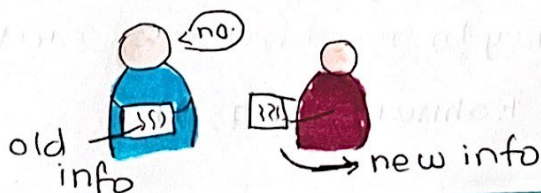
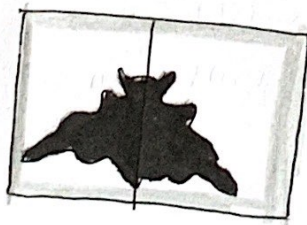
There is no universally accepted common causes of heuristics but some of the major factors are:

- ▶ the tendency to focus on a limited amount of information (framing effect and Asymmetric dominance)



- ▶ the tendency to seek out information that confirms an individual's pre existing beliefs. (confirmation bias, congruence bias, illusory correlations & implicit personality theory)

- ▶ the tendency to avoid the mental stress of holding inconsistent cognitions (cognitive dissonance)



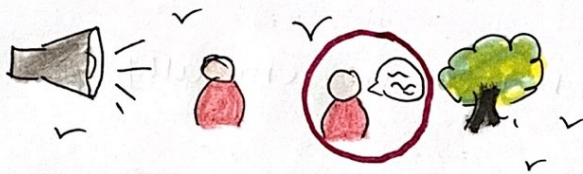


The tendency to focus on a limited amount of available information.

- sensory memory has a high capacity but a limited duration: we cannot pay attention to all of the information around us.

- from the stimuli that we see / process, we only focus on one stimuli and process that in detail.

This is called selective attention.



### Asymmetric Dominance

- This decoy effect is defined as the phenomenon where people change their preference between 2 options when a third option is presented (asymmetrically dominated decoy).
- Adding this asymmetrically dominated decoy in the choice set increases the probability of choosing the option that dominates the decoy.

(Huber, Payne and Puto (1982))

### Framing effect

- Depending on whether outcomes are described as / framed as positive / negative subjects give different judgements.
- People are more willing to take risks to avoid losses & have a tendency to avoid risk associated with gains.

(Tversky and Kahneman (1981)).



The tendency to seek out information that confirms pre-existing beliefs.

↓  
confirmation bias

Watson's four card problem (1968)

- People are more attentive to the information that can support their expectations.
- They ignore the information that contradicts their previous expectations and this preference for potentially supporting evidence is called confirmation bias.



Congruence bias

↳ suggests that the cause of the heuristic is the subjects' failure to come up with an alternative hypothesis.

↳ makes subjects act as if they are trying to obtain positive results rather than useful information.

(Tschirg 1980)

Illusory correlations and implicit personality theories

↳ Illusory correlation is a belief that 2 phenomena are connected when in reality they aren't.

↳ believed to be the mechanism of stereotype formation





Implicit personality theories are sets of beliefs that you have about the behaviour of others; you predict their behaviour on the basis of those beliefs.

### Chapman and Chapman (1969)

The tendency to avoid the mental stress of holding inconsistent cognitions

### Theory of cognitive dissonance

Cognitive dissonance is the mental stress caused by inconsistency between:-

- 2 or more contradictory ideas/beliefs
- one's action & one's belief.
- new information & existing beliefs.

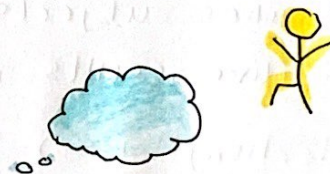


- ▶ Anyone who feels this dissonance feels stressed & uncomfortable and is driven by the desire to reduce this dissonance.

How to reduce this dissonance?

↙  
Change  
behaviour

↘  
change  
belief.



### Research Frameworks to study this dissonance

- ▶ belief disconfirmation paradigm
- ▶ induced compliance paradigm



- When new information disconfirms existing beliefs, the belief itself may be twisted.
- Social support may be sought to further support this new belief; if many people believe the same thing, it gets justified.