Experimental economics

Lecture II - **Intuition**

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References:

- Kahneman, D. (2011). *Thinking, fast and slow.*

- www.kiero.sk/garp.php

A BC

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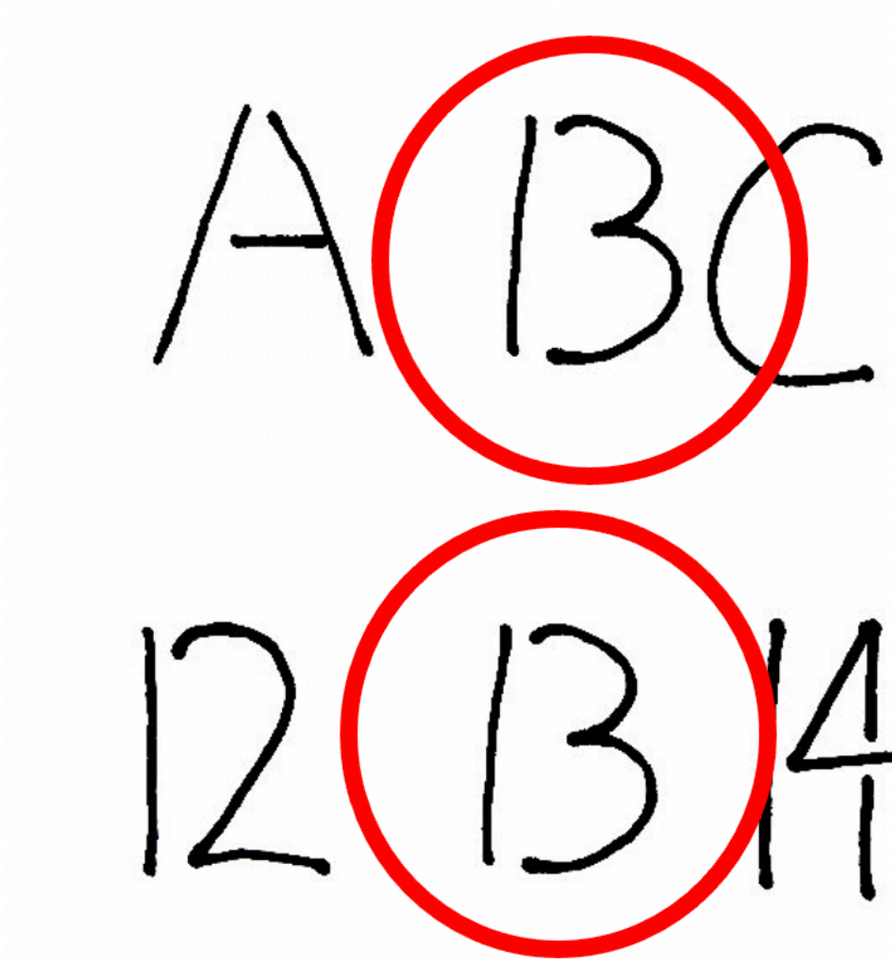
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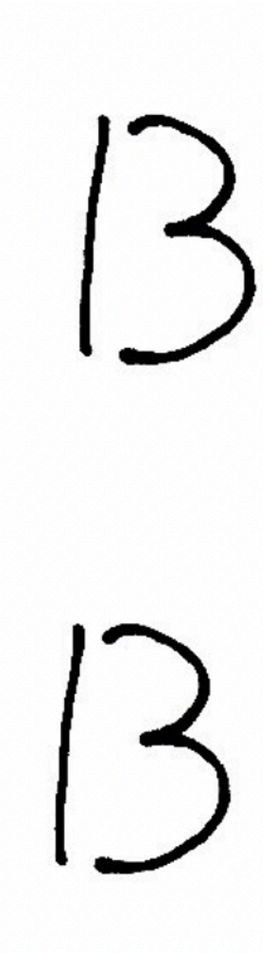
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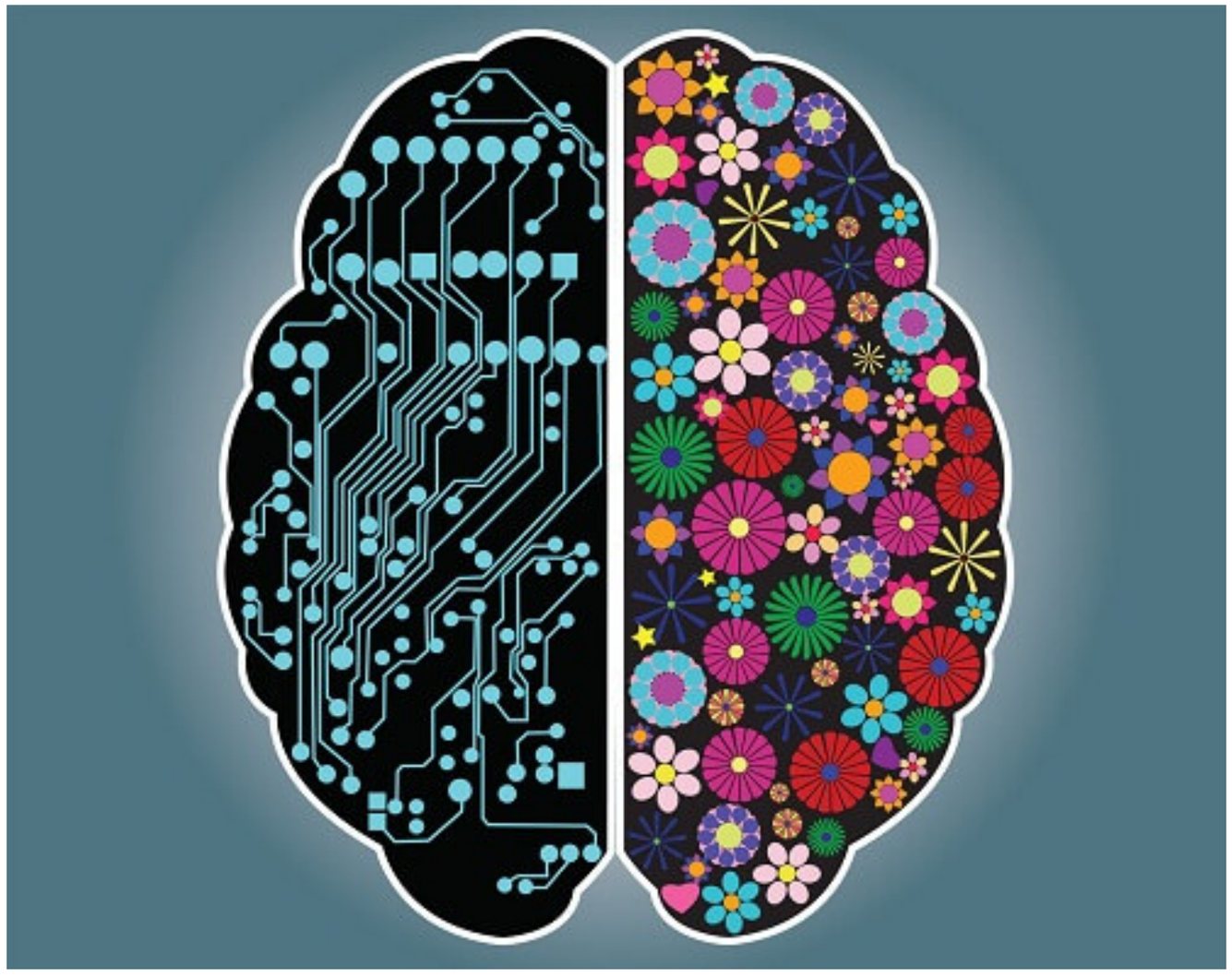
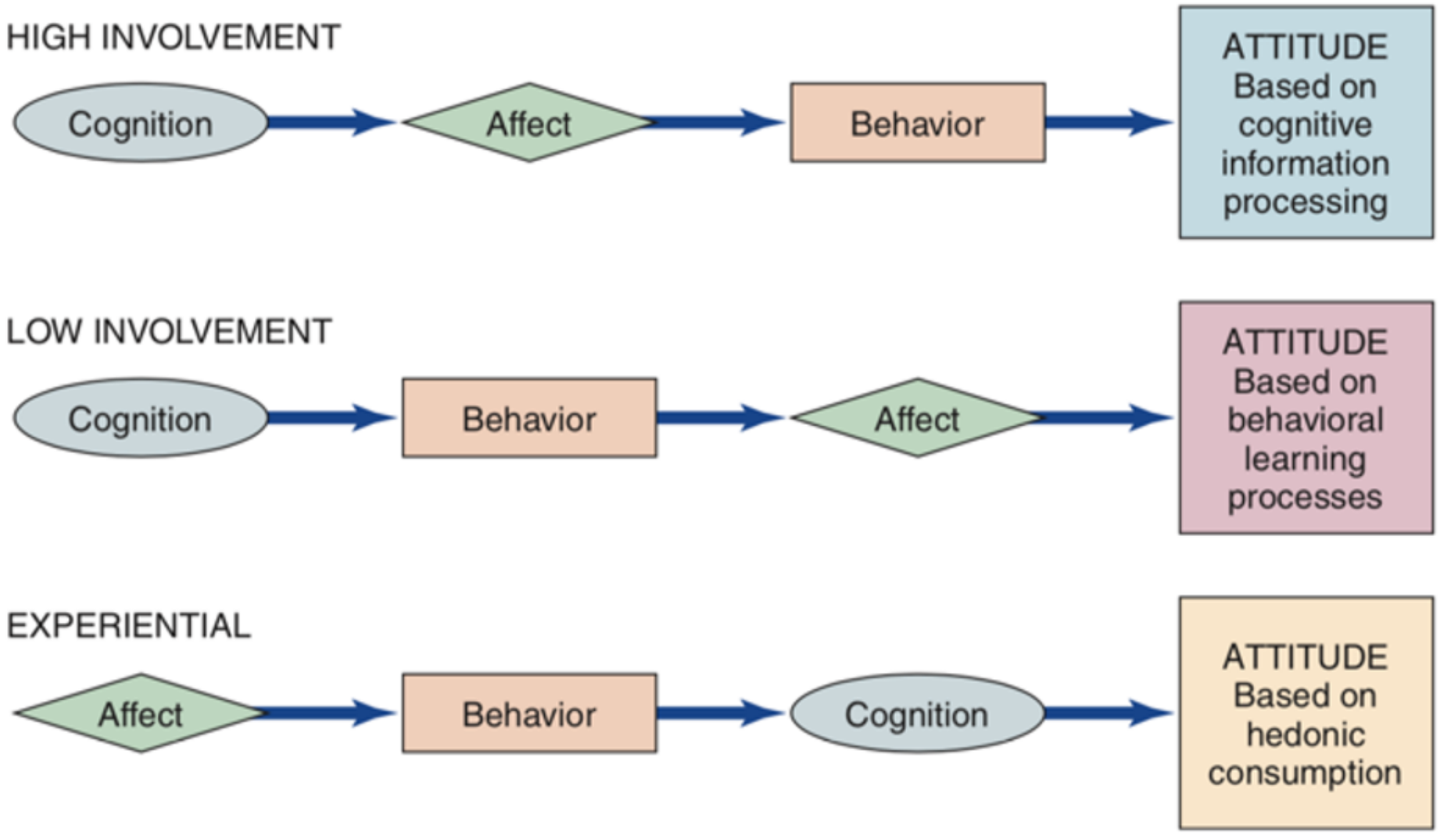


- Two types of thinking: one is deliberative and the other is reactive/intuitive
- Our reactive thinking (aka intuitive, or System 1) is blazingly fast and automatic, it uses our past experiences and a set of simple rules of thumb, almost immediately give us an intuitive evaluation of a situation— through our emotions and through sensations around our bodies like a “gut feeling.
- It’s generally quite effective in familiar situations, where our past experiences are relevant, and does less well in unfamiliar situations.
- Our deliberative thinking (aka conscious, or System 2) is slow, focused, self-aware, and what most of us consider “thinking.” We can rationally analyze our way through unfamiliar situations and handle complex problems with System 2.

Figure 8.1 THREE HIERARCHIES OF EFFECTS



- We’re often not “thinking” when we act. At least, we’re not choosing consciously.
- Most of our daily behavior is governed by our intuitive mode.
- We’re acting on habit (learned patterns of behavior), on gut instinct (blazingly fast evaluations of a situation based on our past experiences), or on simple rules of thumb (cognitive shortcuts or heuristics built into our mental machinery).
- “The rider thinks it’s always in charge, but it’s the elephant doing the work; if the elephant disagrees with the rider, the elephant usually wins.”

- https://www.youtube.com/watch?v=vJG698U2Mvo
- https://www.youtube.com/watch?v=ubNF9QNEQLA

bike

CAR

car

BIKE

car

car

BIKE

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bike

green

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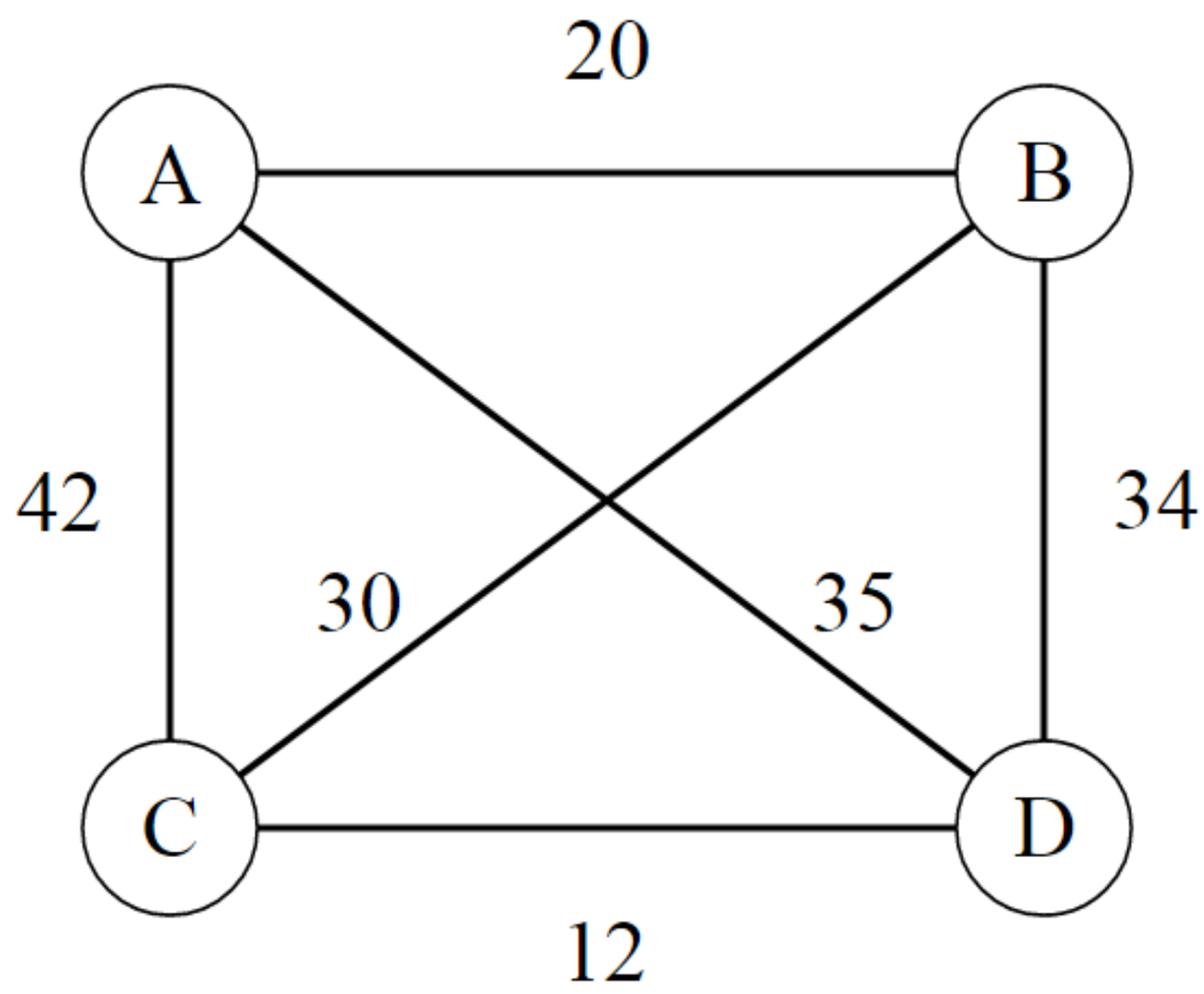
Green

- A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?

- If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?

- In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

System 1	System 2
Subconscious	Conscious
Automatic	Controlled
Effortless	Requires effort
Fast	Slow
Large capacity	Small capacity
Basic process	Learned process
Heuristics	**Deliberate decisions**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35
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D
12

Tab. 1 Časová náročnosť výpočtov [8]

Počet miest	Počet rôznych ciest	Potrebný čas
11	1 814 400	1 s.
12	19 958 400	11 s.
13	239 500 800	2 min.
14	3 113 510 400	30 min.
15	43 589 145 600	7 h.
16	653 837 184 000	4 dni
17	10 461 394 944 000	2,5 mesiaca
21	1 216451 004088 320000	22 000 rokov
25	310224200866619719680000	5 mld. rokov

Highest rating?
A lot of customers?
Rememer an ad?
Experience with sth similar?
Price as a quality signal?

System 1 characterictics

- While researchers don’t fully understand this process, we have some significant clues as to what drives our nonconscious reactions.

- **It’s strongly social:** In many ways, we are wired to pay attention to and focus on social interactions. We intuitively assess whether something is right for us to do based on whether it’s something that other people like us seem to do. We are hesitant to take actions that our peers might disapprove of. We try to be consistent with our social commitments and our sense of identity, both of which depend on and are shaped by our interactions with others. Our social connections reach us at a level that’s deeper, less deliberative, than merely a cost–benefit analysis of expected outcomes.

- **It’s linked by similarity:** Our minds quickly assess how we feel about unfamiliar things based on their similarity to more familiar items (aka the similarity heuristic). Sometimes those similarities express something essential—like the genre of a book or movie. But often, the distinctions are based on more cursory distinctions: shape, color, smell. This is true for fruit and for people: it’s a root cause of stereotyping, and like all mental shortcuts, it’s a valuable cognitive tool that can go awry.

- **It’s shaped by familiarity:** The more we’re exposed to something, like an idea or object, the more we tend to like it (all else being equal). Researchers call this the mere exposure effect. For example, advertisers rely on this principle when they buy ads to show you an image of a brand again and again—just by seeing the ad, people can come to like the brand more (again, all else being equal). More generally, our minds confound the easy-to-remember with the true; it just feels right to us when we can think about it quickly.

- **It’s trained by experience:** Our intuitive responses are the ruts cut into the earth of our mind by frequent passage. Over time, our minds learn associations; the things that we have enjoyed in the past, we learn to react positively to in the future (operant conditioning); even the things that are associated with good experiences in the past can make us respond positively (classical conditioning). And even without formal conditioning, our minds learn what to expect in a familiar situation. For example, if we’re thinking about walking up 10 flights of stairs, the last time we took the stairs and almost had a heart attack will color how we feel about doing it again (and this can occur before we consciously think about whether or not to act). Prior experience can also affect us in more immediate ways: if we’ve become angry, we may interpret an ambiguous situation as more hostile than if we were in a good mood to start with.

COGNITIVE BIAS CODEX

What Should We Remember?

We store memories differently based on how they were experienced

We reduce events and lists to their key elements

We discard specifics to form generalities

We edit and reinforce some memories after the fact

Levels of processing effect
Absent-mindedness
Testing effect
Next-in-line effect
Google effect
Tip of the tongue phenomenon
Suffix effect
Serial position effect
Part-list cueing effect
Recency effect
Primacy effect
Memory inhibition
Modality effect
Duration neglect
List-length effect
Serial recall effect
Misinformation effect
Levelling and sharpening
Peak-end rule
Fading affect bias
Negativity bias
Prejudice
Stereotypical bias
Implicit stereotypes
Implicit associations
Spacing effect
Suggestibility
False memory
Cryptomnesia
Source confusion
Misattribution of memory

Too Much Information

We notice things already primed in memory or repeated often

Bizarre, funny, visually-striking, or anthropomorphic things stick out more than non-bizarre/unfunny things

We notice when something has changed

We are drawn to details that confirm our own existing beliefs

We notice flaws in others more easily than than we notice flaws in ourselves

We tend to find stories and patterns even when looking at sparse data

We fill in characteristics from stereotypes, generalities, and prior histories

We imagine things and people we're familiar with or fond of as better

We simplify probabilities and numbers to make them easier to think about

We think we know what other people are thinking

We project our current mindset and assumptions onto the past and future

Availability heuristic
Attentional bias
Illusory truth effect
Mere exposure effect
Context effect
Cue-dependent forgetting
Mood-congruent memory bias
Frequency illusion
Baader-Meinhof Phenomenon
Empathy gap
Omission bias
Base rate fallacy
Bizarreness effect
Humor effect
Von Restorff effect
Picture superiority effect
Self-relevance effect
Negativity bias
Anchoring
Conservatism
Contrast effect
Distinction bias
Focusing effect
Framing effect
Money illusion
Weber-Fechner law
Confirmation bias
Congruence bias
Post-purchase rationalization
Choice-supportive bias
Selective perception
Observer-expectancy effect
Observer-experimenter's bias
Observer effect
Expectation bias
Ostrich effect
Subjective validation
Continued influence effect
Semmelweis reflex
Bias blind spot
Naïve cynicism
Naïve realism
Confabulation
Clustering illusion
Insensitivity to sample size
Neglect of probability
Anecdotal fallacy
Illusion of validity
Masked man fallacy
Recency illusion
Gambler's fallacy
Hot-hand fallacy
Illusory correlation
Pareidolia
Anthropomorphism
Group attribution error
Ultimate attribution error
Stereotyping
Essentialism
Functional fixedness
Moral credential effect
Just-world hypothesis
Argument from fallacy
Authority bias
Automation bias
Bandwagon effect
Placebo effect
Out-group homogeneity bias
Cross-race effect
In-group bias
Halo effect
Cheerleader effect
Positivity effect
Not invented here
Reactive devaluation
Well-traveled road effect
Mental accounting
Appeal to probability fallacy
Normalcy bias
Murphy's Law
Zero sum bias
Survivorship bias
Subadditivity effect
Denomination effect
Magic number 7+-2
Illusion of transparency
Curse of knowledge
Spotlight effect
Extrinsic incentive error
Illusion of external agency
Illusion of asymmetric insight
Self-consistency bias
Restraint bias
Projection bias
Pro-innovation bias
Time-saving bias
Planning fallacy
Pessimism bias
Impact bias
Declinism
Moral luck
Outcome bias
Hindsight bias
Rosy retrospection
Telescoping effect

Need To Act Fast

To avoid mistakes, we aim to preserve autonomy and group status, and avoid irreversible decisions

To get things done, we tend to complete things we've invested time & energy in

To stay focused, we favor the immediate, relatable thing in front of us

To act, we must be confident we can make an impact and feel what we do is important

Status quo bias
Social comparison bias
Decoy effect
Reactance
Reverse psychology
System justification
Backfire effect
Endowment effect
Processing difficulty effect
Pseudocertainty effect
Disposition effect
Zero-risk bias
Unit bias
IKEA effect
Loss aversion
Generation effect
Escalation of commitment
Irrational escalation
Sunk cost fallacy
Identifiable victim effect
Appeal to novelty
Hyperbolic discounting
Peltzman effect
Risk compensation
Effort justification
Trait ascription bias
Defensive attribution hypothesis
Fundamental attribution error
Illusory superiority
Illusion of control
Actor-observer bias
Self-serving bias
Barnum effect
Forer effect
Optimism bias
Egocentric bias
Dunning-Kruger effect
Lake Wobegone effect
Hard-easy effect
False consensus effect
Third-person effect
Social desirability bias
Overconfidence effect
Less-is-better effect
Occam's razor
Conjunction fallacy
Delmore effect
Law of Triviality
Bike-shedding effect
Rhyme as reason effect
Belief bias
Information bias
Ambiguity bias

Not Enough Meaning

- A study focusing on kindey cancer found that this type of cancer is **most prevalent** in rural, sparsely populated villages, in which there is also a very high unemployment rate.

- What could be the reason?

- A study focusing on kindey cancer found that this type of cancer is **least prevalent** in rural, sparsely populated villages, in which there is also a very high unemployment rate.

- What could be the reason?

- It is a well known fact that the most intelligent women tend to marry less intelligent men on average. Why?

Narrative fallacies

- Narrative fallacies arise inevitably from our continuous attempt to make sense of the world. A great example is a survivorship bias.

- The explanatory stories that people find compelling are simple; are concrete rather than abstract; assign a larger role to talent, stupidity, and intentions than to luck; and focus on a few striking events that happened rather than on the countless events that failed to happen. Any recent salient event is a candidate to become the kernel of a causal narrative. We humans constantly fool ourselves by constructing flimsy accounts of the past and believing they are true.

- You build the best possible story from the information available to you, and if it is a good story, you believe it. Paradoxically, it is easier to construct a coherent story when you know little, when there are fewer pieces to fit into the puzzle. Our comforting conviction that the world makes sense rests on a secure foundation: our almost unlimited ability to ignore our ignorance.

- The most coherent stories are not necessarily the most probable, but they are plausible, and the notions of coherence, plausibility, and probability are easily confused by the unwary. This is a trap for forecasters and their clients: adding detail to scenarios makes them more persuasive, but less likely to come true.

- Statistics produce many observations that appear to beg for causal explanations but do not lend themselves to such explanations. Many facts of the world are due to chance, including accidents of sampling. Causal explanations of chance events are inevitably wrong.

- https://www.ted.com/talks/liv_boeree_3_lessons_on_decision_making_from_a_poker_champion

Takeaways

- Most judgments happen on unconscious level and are a product of System 1. It works on associations (patterns) and builds heuristics and habits. It remembers hits but often does not remember misses.

- We use heuristics (mental shortcuts), often called “intuition” or “common sense” because of our constraints, such as limited attention, limited computational capacity and limited energy. They are automatic - the action occurs outside of conscious control, and we may not even be aware of it happening, which keeps our conscious minds free for other things, where conscious thought is required. They are also extremely fast, potentially saving a lot of time (and costs) and often quite reliable.

- System 1 always offer intuitive solution. But intuition is not always correct. Intuition is nothing more and nothing less than recognition. It works neatly only in predictable environments which offer immediate feedback and opportunity to repeat the decision or judgment. In other enviroments, it is better to stop and doubt, use Devil’s advocate or a premortem strategy.

- We are prone to overestimate how much we understand about the world and to underestimate chance events. The best we can do is a compromise: learn to recognize situations in which mistakes are likely and try harder to avoid significant mistakes when the stakes are high.

- Instead of jumping to conclusions, it is often better to consider the source of the information, the sample size and assess how big is the role of luck in a given situation.