

COGNITIVE BIAS

OUR MENTAL SHORTCUTS - 'HEURISTICS' - ARE RESPONSES TO FOUR BASIC CHALLENGES*

WHEN THINGS ARE NOT MAKING ENOUGH SENSE TO US... WE FILL IN THE GAPS AND GENERALIZE. **1** **3**

WHEN WE FEEL THERE'S NOT ENOUGH TIME TO FIGURE IT OUT... WE GO FOR WHAT LOOKS EASY AND FAMILIAR, AND DOABLE. **2** **4**

WHEN TOO MUCH INFORMATION IS COMING AT US... WE BECOME SELECTIVE IN WHAT WE NOTICE.

WHEN WE'RE NOT SURE WHAT WE NEED TO KNOW OR REMEMBER... WE PICK ONLY WHAT WE FEEL IS IMPORTANT.

Accentuation bias ■ When aspects of something placed into a category match that category's stereotypes, and are over-emphasized and believed greater than they are.

Acquiescence bias ■ The tendency of a respondent to agree with a statement, very often when questions are presented in truisms or clichés.

Actor-observer bias ■ Explaining another person's behaviour by reference to their personality more than situational influences. We do the opposite explaining our own.

Ambiguity effect ■ The tendency to avoid options for which missing information makes the probability seem "unknown".

Anchoring or focalism ■ Relying too heavily - "anchoring" - on one piece of information to make decisions, usually the first piece of information acquired on that subject.

Anthropocentrism ■ The bias that humans are the central or most important element of existence, as opposed to god or animals.

Anthropomorphic personification ■ Characterizing animals, objects, concepts as having human-like traits, emotions, and intentions.

Attentional bias ■ A tendency of our perception to be affected by our recurring thoughts.

Attribute substitution ■ Given a difficult and novel problem, we reach for a more familiar, related problem that we can deal with.

Authority bias ■ Attributing greater accuracy to the opinion of an authority figure - unrelated to its content - and be more influenced by that opinion.

Automation bias ■ Excessive dependency on automated systems which can lead to erroneous automated information overriding correct decisions.

Availability heuristic ■ Overestimating the likelihood of events because of how recent or 'available' a memory is, or how unusual or emotionally charged it may be.

Availability cascade ■ The self-reinforcing process by which collective belief gains more and more plausibility through its increasing repetition in public discourse.

Backfire effect ■ Reacting to disconfirming evidence by strengthening one's previous beliefs. (see Continued Influence Effect)

Bandwagon effect ■ The tendency to do (or believe) things because many other people do (or believe) the same. Related to groupthink and herd behaviour.

Base rate fallacy/neglect ■ Ignoring base rate information i.e. general information, by over focusing on specific information pertaining to a certain case.

Belief bias ■ An effect where someone's evaluation of the logical strength of an argument is biased by the believability of the conclusion.

Ben Franklin effect ■ When we do a person a favour, we tend to like that person more as a result. We justify doing that favour by believing that we liked the person.

Berkson's paradox effect ■ A selection bias in statistics that suggest to us that two values are positively related when they are in fact not so.

Bias blind spot ■ Seeing oneself as less biased than others, or being able to identify more cognitive biases in others than in oneself.

Birthday number effect ■ The unconscious preference for numbers in our birthdays over other numbers.

Bizarreness effect ■ Bizarre material is better remembered than common material.

'Century of the Self' effect ■ When the misuse of psychology deflects us from rationally, consciously considering problems by appealing to our primitive impulses instead.

Change bias ■ After an investment of effort in producing change, remembering one's past performance as more difficult than it actually was unreliable source?

Cheerleader effect ■ The tendency for people to appear more attractive in a group than in isolation.

Choice-supportive bias ■ When we remember our choices as better than they actually were.

Childhood amnesia ■ The retention of few memories from before the age of four.

Clustering illusion ■ Overestimating the importance of small runs, streaks, or clusters in large samples of random data (that is, seeing phantom patterns).

Confirmation bias ■ When we search for, interpret, focus on and remember information in ways that confirm our preconceptions.

Congruence bias ■ The tendency to test hypotheses exclusively through direct testing, instead of testing possible alternative hypotheses.

Conjunction fallacy ■ We often tend to assume that specific conditions are more probable than general ones.

Conservatism or Regressive bias ■ Remembering high values / likelihoods/probabilities/frequencies as lower than they actually were and low ones as higher than they actually were.

Conservatism (belief revision) ■ The tendency to revise one's belief insufficiently when presented with new evidence.

Consistency bias ■ Incorrectly remembering one's past attitudes and behaviour as resembling present attitudes and behaviour.

Context effect ■ Out-of-context memories are more difficult to retrieve than in-context memories (e.g., recall of a work-related memory will be lower at home.)

Continual influence effect ■ Even when misinformation has been corrected, it can still affect inferences you make later. (see Backfire effect)

Contrast effect ■ The enhancement or reduction of a certain perception's stimuli when compared with a recently observed, contrasting object.

Courtesy bias ■ Offering an opinion that is more socially correct than one's true opinion, so as to avoid offending anyone.

Cross-race effect ■ The tendency for people of one race to have difficulty identifying members of a race other than their own.

Cryptomnesia ■ A form of misattribution where a memory is mistaken for imagination, because there is no subjective experience of it being a memory.

Curse of knowledge ■ When better-informed people find it extremely difficult to think about problems from the perspective of lesser-informed people.

Declinism ■ Believing that a society or institution is in decline; or viewing the past favourably and future negatively. (see Rosy Retrospection)

Decoy effect ■ Preferences for either option A or B change in favour of option B when option C is presented, which is similar to option B but in no way better.

Defensive attribution hypothesis ■ Attributing more blame to a harm-doer as the outcome becomes more severe or as personal or situational similarity to the victim increases.

Difformation Professionelle ■ Looking at things according to the conventions of one's work, forgetting the broader view.

Denomination effect ■ Spending more money when it is denominated in small amounts (e.g. coins) rather than large amounts (e.g. bills).

Disposition effect ■ A tendency to sell an asset that has accumulated in value and resist selling an asset that has declined in value.

Distinction bias ■ Viewing two options as more dissimilar when evaluating them simultaneously than when we do separately.

Dunning-Kruger effect ■ A tendency for unskilled individuals to overestimate their own ability and the tendency for experts to underestimate their own ability.

Duration neglect ■ The neglect of the duration of an episode in determining its value.

Egocentric bias ■ Claiming more credit for oneself for the results of a joint action. Also recalling the past in a self-serving manner - the biggest fish, the best mark.

Empathy gap ■ The tendency to underestimate the influence or strength of feelings, in either oneself or others.

End of day betting effect ■ When bettors take gambles with higher risk and higher reward at the end of their betting session to try to make up for losses. (Sunk Cost)

End of history illusion ■ Despite recognizing that one's perceptions have evolved, one nonetheless predicts that one's perceptions will remain roughly the same in the future.

Endowment effect ■ The tendency for people to demand much more to give up an object than they would be willing to pay to acquire it.

Evidence of absence Bias ■ The belief that one can prove a negative by citing absence of evidence for it as justification.

Exaggerated expectation ■ When real-world evidence turns out to be less extreme than our expectations. (- see Conservatism Bias)

Experimenter's or expectation bias ■ The tendency for experimenters to believe data that agree with their expectations and to disbelieve data that seem to conflict with them.

Exposure suspicion ■ How a knowledge of a subject's disease in a medical study may influence the search for causes.

Extremes aversion ■ We're more likely to choose an option if it is the intermediate choice, rather than an extreme one.

Extrinsic incentives bias ■ Viewing others' motivations as situational-based while viewing one's own as dispositional, or intrinsic.

Fading affect bias ■ A bias in which the emotion associated with unpleasant memories fades more quickly than the emotion associated with positive events.

False consensus effect ■ The tendency for people to overestimate the degree to which others agree with them.

False memory ■ A form of misattribution where imagination is mistaken for a memory.

Familiarity Effect ■ We favour what looks familiar and doable over novel, especially under heavily cognitive load.

Fluency bias ■ The more skillfully or elegantly an idea is communicated, the more likely it is to be considered seriously.

Focusing effect ■ The tendency to place too much importance on one aspect of an event.

Forer effect / Barnum effect ■ We rate as accurate a description of ourselves we're told is tailored only for us - though it's vague and general enough to apply to many people.

Framing effect ■ Drawing different conclusions from the same information, depending on how that information is presented.

Frequency illusion ■ The illusion in which a word, a name, or other thing that has recently come to one's attention now seems to appear with more frequency afterwards.

Functional fixedness ■ Limits a person to using an object only in the way it is traditionally used.

Fundamental attribution error ■ A tendency to over-emphasize personality-based explanations for behaviours in others while under-emphasizing situational influences.

(Self) Generation effect ■ Self-generated information and statements are remembered best.

Gambler's fallacy ■ Thinking that future probabilities are altered by past events, when in reality they are unchanged.

Google effect ■ The tendency to forget information that can be found readily online by using Internet search engines.

Group attribution error ■ Assuming that group decisions reflect the preferences of group members. Also, that a person's characteristics are reflective of a group.

Halo effect ■ Believing that a person's positive or negative traits "spill over" into other areas of that person's personality.

Hard-easy effect ■ Overestimating the probability of success at a hard task, and underestimating it at an 'easy' task.

Hawthorne effect ■ When a researcher overlooks that a subject's response changes due to awareness of being observed.

Herd Instinct ■ Adopting the opinions and following the behaviours of the majority, to feel safer and to avoid conflict.

Hindsight bias ■ Viewing past events as being more predictable than they actually were; also called the "I-knew-it-all-along" effect.

Horn effect ■ When one's perception of another is unduly influenced by a single negative trait.

Hostile attribution bias ■ The "hostile attribution bias" is the tendency to interpret others' behaviours as having hostile intent, even when the behaviour is ambiguous or benign.

Hot-hand fallacy ■ The belief that one's success with a random event confers a greater chance of further success in additional attempts.

Humour effect ■ Humorous items are more easily remembered than non-humorous ones.

Hypocognition ■ Assuming that because one can't find words to express a perception, that this perception is not occurring.

Hyperbolic discounting ■ Preferring payoffs now, not later. Our choices today would not be made by our future selves, even using the same reasoning.

Identifiable victim effect ■ The tendency to respond more strongly to a single identified person at risk than to a large group at risk.

IKEA effect ■ Placing a disproportionately high value on objects one partially assembled, regardless of the quality of the result.

Illusion of control ■ The tendency to overestimate one's degree of influence over other external events.

Illusion of asymmetric insight ■ People perceive their knowledge of their peers to surpass their peers' knowledge of them.

Illusion of external agency ■ When people view self-generated preferences as instead being caused by insightful, effective and benevolent agents.

Illusion of transparency ■ People overestimate others' ability to know them, and they also overestimate their ability to know others.

Illusion of truth effect ■ Identifying as true statements we have previously heard, regardless of its validity. We believe a familiar statement sooner than an unfamiliar one.

Illusion of validity ■ Belief that more acquired information generates additional relevant data for predictions, even when it evidently does not.

Illusory correlation ■ Inaccurately perceiving a relationship between two unrelated events.

Illusory superiority ■ Overestimating one's desirable qualities, and underestimating undesirable qualities, relative to other people.

Illusory truth effect ■ A tendency to believe a statement is true if it is easier to process, or if it has been stated multiple times, regardless of its veracity, aka "truthiness".

Impact bias ■ Overestimate the length or the intensity of the impact of future feeling states.

Inequity aversion ■ A preference for fairness and resistance to incidental inequities.

Information bias ■ The tendency to seek information even when it cannot affect action.

Ingroup bias ■ A tendency for people to give preferential treatment to others they perceive to be members of their own groups.

Insensitivity to sample size ■ Under-expecting variation in small samples.

Introspection illusion ■ When we believe we have direct, accurate insight into our mental state and even others'.

Irrational escalation ■ Justifying increased investment based on prior investment, despite new evidence that the decision may be wrong, aka Sunk Cost Fallacy.

Just-world hypothesis ■ Believing that the world is fundamentally just, causing us to rationalize an otherwise inexplicable injustice is deserved by the victim.

Log effect ■ Learning is greater when studying is spread out over time, as opposed to studying the same amount of time in a single session. - see Spacing effect.

Lake Wobegon effect ■ A tendency to report flattering beliefs about oneself and believe one is above average.

Law of the instrument ■ Over-reliance on a familiar tool or methods, ignoring or under-valuing alternatives. "If all you have is a hammer, everything looks like a nail."

Less-is-better effect ■ The tendency to prefer a smaller set to a larger set judged separately, but not jointly.

Leveling and sharpening ■ Memory distortions introduced by loss of details over time. Often goes with selective recollection of details that take on exaggerated significance.

Levels-of-processing effect ■ That different methods of encoding information into memory have different levels of effectiveness.

List-length effect ■ The longer the list, the smaller percentage of items remembered. The absolute number may increase, however.

Look-elsewhere effect ■ An apparently statistically significant opportunity may have actually arisen by chance because of the size of the parameter space to be searched.

Ludic fallacy ■ Faulty analysis of probability issues caused by studying too narrow a frame of games.

Loss aversion ■ The disutility of giving up an object is greater than the utility associated with acquiring it. (see Sunk cost effects and Endowment effect)

Magic number 7 ± 2 bias ■ The maximum number of chunks of information a person can hold in working memory at the same time (Miller's Law).

Misinformation effect ■ Memory becoming less accurate because of interference from post-event information.

Mere exposure effect ■ Expressing undue liking for things merely because of familiarity with them.

Modesty effect ■ Recall is higher for the last items of a list when the list items were spoken than when they were read.

Modesty bias ■ Blaming failures on oneself while attributing successes to situational factors. Opposite of self-serving bias.

Money illusion ■ Concentrating on the nominal value (face value) of money rather than its value in terms of purchasing power.

Mood-congruent memory bias ■ The improved recall of information congruent with one's current mood.

Moral credential effect ■ Using a track record of non-prejudice to excuse increased subsequent prejudice.

Moral luck ■ The tendency to ascribe greater or lesser moral standing based on the outcome of an event.

Native cynicism ■ Expecting more egocentric bias in others than in oneself.

Native realism ■ The belief that we see reality objectively and without bias and that those who don't agree are biased or irrational

Name letter effect ■ A tendency to prefer the letters in your name over other letters in the alphabet.

Negativity bias / Negativity effect ■ We have greater recall of unpleasant memories compared with positive memories.

Neglect of prior base rate ■ Failing to incorporate prior known probabilities which are pertinent to the decision at hand.

Neglect of probability ■ The tendency to completely disregard probability when making a decision under uncertainty.

Next-in-line effect ■ A person in a group has diminished recall for the words of others who spoke immediately before him or her, if they take turns speaking.

Normalcy bias ■ The refusal to plan for, or react to, a disaster which has never happened before.

Not invented here ■ Aversion to contact with, or use of, products, research, standards, or knowledge developed outside a group.

Obsequiousness bias ■ The tendency to systematically alter responses in the direction they perceive desired by the investigator.

Observer-expectancy effect ■ A researcher giving a given result may unconsciously manipulate an experiment or misinterpret data in order to find it.

Omission bias ■ The tendency to judge harmful actions as worse, or less moral, than equally harmful omissions (inactions).

Outgroup homogeneity bias ■ Individuals see members of their own group as being relatively more varied than members of other groups.

Optimism bias ■ A tendency to be over-optimistic, overestimating favourable outcomes aka wishful thinking.

Ostrich effect ■ Ignoring an obvious (negative) situation.

Othello error ■ When an observer's suspicions wrongly discounts innocent, or wrongly attributes guilt.

Outcome bias ■ The tendency to judge a decision by its eventual outcome instead of based on the quality of the decision at the time it was made.

Overconfidence effect ■ Excessive confidence in one's own answers to questions.

Pareidolia ■ When a vague and random stimulus is perceived as significant, e.g. seeing images in clouds.

Part-list cuing effect ■ That being shown some items from a list and later retrieving one item causes it to become harder to retrieve the other items.

Peak-end rule ■ When we evaluate an experience not as a whole, but as the average of its peak (e.g. pleasant or unpleasant) and also how the experience ended.

Persistence ■ The unwanted recency of memories of a traumatic event.

Pessimism bias ■ The tendency for some people, especially those suffering from depression, to overestimate the likelihood of negative things happening to them.

Picture superiority effect ■ A belief that concepts that are learned by viewing pictures are more easily and frequently recalled than concepts that are learned via text.

Polling fallacy ■ Underestimating task-completion times.

Pollyanna principle ■ We tend to remember pleasant items more accurately than unpleasant ones.

Positivity effect ■ That older adults favour positive over negative information in their memories.

Post-purchase rationalization ■ The tendency to persuade oneself through rational argument that a purchase was good value.

Precision bias ■ Believing that simply because a statement is precise, it is also true.

(Serial) position effect ■ Items near the end or the beginning of a sequence are easiest to recall; items in the middle are least likely. (Primacy/Recency effect)

Processing difficulty effect ■ That information that takes longer to read and is thought about more (processed with more difficulty) is more easily remembered.

Pro-innovation bias ■ Excessive optimism towards an invention or innovation's usefulness throughout society, often failing to identify its limitations and weaknesses.

Projection bias ■ Overestimating how much our future selves share one's current preferences, thoughts and values, thus leading to sub-optimal choices.

Pseudocertainty effect ■ A tendency to make risk-averse choices if the expected outcome is positive, but make risk-seeking choices to avoid negative outcomes.

Reactance ■ An urge to do the opposite of what someone wants you to do out of a need to resist a perceived attempt to limit your freedom (Reverse psychology).

Reactive devaluation ■ Devaluing proposals only because they purportedly originated with an adversary.

Recall bias ■ Primed by exposure to information on a topic of high value, one searches one's memory more thoroughly.

Recency illusion ■ The illusion that a word or language usage is a recent innovation when it is in fact long-established (see also frequency illusion).

Reminiscence bump ■ The recalling of more personal events from adolescence and early adulthood than personal events from other lifetime periods.

Regression fallacy ■ Believing that something has returned to normal because of corrective actions, while failing to factor in natural fluctuations.

Regressive bias ■ A state of mind wherein high values and high likelihoods are overestimated while low values and low likelihoods are underestimated.

Restraint bias ■ The tendency to overestimate one's ability to show restraint in the face of temptation.

Rhyme as reason effect ■ Rhyming statements being perceived as more truthful. A famous example from the O.J. Simpson: "If the gloves don't fit, then you must acquit."

Risk compensation / Pelzman effect ■ The tendency to take greater risks when perceived safety increases.

Rosy retrospection ■ The remembering of the past as having been better than it really was.

Scarcity bias ■ The assumption that the more difficult it is to acquire an item the more valuable that item is.

Selective perception ■ Rare events that are widely reported after the perception of how common they truly are. ('Cherry-picking' by contrast, is a conscious process)

Selective perception ■ The tendency for expectations to affect perception.

Self-fulfilling prophecy ■ Acting in ways that elicit results which, consciously or subconsciously, will confirm our beliefs.

Self-relevance effect ■ That memories relating to the self are better recalled than similar information relating to others.

Self-serving bias ■ Claiming more responsibility for successes than failures and evaluating ambiguous information to benefit one's interests. (Benefitance)

Semmelweis reflex ■ Rejecting new evidence that contradicts a paradigm.

Serial position effect ■ When one recalls the first and last items in a series best, and the middle items worst.

Sexual over/under perception bias ■ The tendency to over/underestimate sexual interest of another person in oneself.

Shared information bias ■ More time and energy discussing information that all members are familiar with than with information that only some members are aware of.

Sociality bias of language ■ Disproportionally higher representation of words related to social interactions, compared to words related to physical or mental aspects of behaviour.

Social comparison bias ■ The tendency, when making decisions, to favour potential candidates who don't compete with one's own particular strengths.

Social desirability bias ■ We over-report socially desirable characteristics or behaviours about ourselves, and under-report the undesirable.

Source confusion ■ Confusing episodic memories with other information, creating distorted memories.

Spacing effect ■ That information is better recalled if exposure to it is repeated over a long span of time rather than a short one.

Spiral of silence effect ■ When one's anxieties about social exclusion or isolation lead to false assessments of one's social environment.

Spotlight effect ■ The tendency to overestimate the amount that other people notice your appearance or behaviour.

Status quo bias ■ The tendency to like things to stay relatively the same (see also loss aversion, endowment effect, and system justification).

Stereotypical bias ■ Memory distorted towards stereotypes. Often filtered through biases such as gender or race.

Stereotyping ■ Expecting a member of a group to have certain characteristics without having actual information about that individual.

Subadditivity effect ■ The tendency to judge probability of the whole to be less than the probabilities of the parts.

Subjective validation ■ Perception that something is true if a subject's belief demands it to be true. Also suggests perceived connections between coincidences.

Suffix effect ■ Diminishment of the recency effect because a sound item is appended to the list that the subject is not required to recall.

Suggestibility ■ A form of misattribution where ideas suggested by a questioner are mistaken for memory.

Sunk cost ■ Allocating more resources solely because giving up would mean earlier efforts have been wasted. (Loss aversion, Endowment, end of day better)

Surrogation ■ Losing sight of the strategic item that a measure is supposed to represent, and then acting as though the measure is the actual item itself.

Survivorship bias ■ Focusing on the people or things that "survived" some process and inadvertently overlooking those that didn't because of their lack of visibility.

System justification ■ A tendency to defend and bolster the status quo, often while disparaging the alternatives disparaged.

Telescoping effect ■ A tendency to shift recent events back in time and remote ones forward in time, so that recent appear more remote, and remote more recent.

Testing effect ■ The fact that you more easily remember information you have read by rewriting it instead of rereading it.

Texas sharpshooter fallacy/Experimenter regress ■ Picking or altering a hypothesis after data are collected, making a fair test of an hypothesis impossible.

Time-saving bias ■ Underestimating the time saved or lost when increasing or decreasing from a slow speed; and overestimating same from a high speed.

Third-person effect ■ Belief that mass communicated media messages have a greater effect on others than on themselves.

Tip of the tongue phenomenon ■ Recalling parts of an item or related information, but unable to recall the whole item.

Trait ascription bias ■ Viewing oneself as relatively variable in terms of personality, behaviour, and mood while viewing others as much more predictable.

Travis Syndrome ■ Overestimating the significance of the present as being necessarily more significant or developed than in the past

Triviality / Parkinson's Law of... ■ Giving undue weight to trivial issues. Avoiding complex subjects in favour of something easy to grasp or rewarding to the average participant.

True believer syndrome ■ Continuing to believe in a paranormal phenomenon even after it had been proven to have been staged.

Ultimate attribution error ■ As with the Fundamental Attribution Error, one is likely to make an internal attribution to an entire group instead of the individuals within the group.

Unacceptability bias ■ When one does not want to reveal a potentially embarrassing or incriminating detail or fact.

Unit bias ■ The tendency to want to finish a given unit of a task or an item. Strong effects on the consumption of food in particular.

Verbatim effect ■ The "gist" of "what someone has said is better remembered than verbatim wording. This is because memories are not copies, but reconstructions.

Von Restorff effect ■ That an item that sticks out is more likely to be remembered than other items

Weber-Fechner law ■ Difficulty in comparing small differences in large quantities.

Well travelled road effect ■ Underestimating the time taken to traverse off-travelled routes and overestimating time taken to traverse less familiar routes.

Wooledge effect ■ When frequent citation of previous publications that actually lacked evidence misleads us into believing there is evidence to support a belief.

Worse-than-average effect ■ A tendency to believe ourselves to be worse than others at tasks which are difficult.

Zeigarnik effect ■ That uncompleted or interrupted tasks are remembered better than completed ones.

Zero-risk bias ■ Preference for reducing a small risk to zero over a greater reduction in a larger risk.

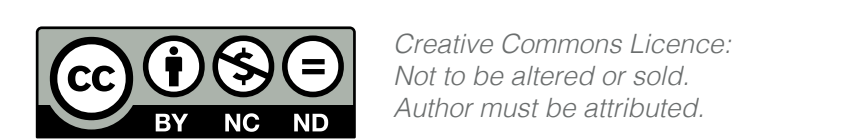
Zerosum bias ■ A bias whereby a situation is incorrectly perceived to be like a zero-sum game (i.e., one person gains at the expense of another).

TYPES OF BIAS

DECISION MAKING, BELIEF, BEHAVIOURAL
Many of these biases affect belief formation, business and economic decisions, probability estimates, and human behaviour in general.

MEMORY ERRORS
A memory bias enhances or impairs recall of a memory. This includes whether the memory will be recalled, the time it takes for recall, or altering its content.

SOCIAL ATTRIBUTION
We constantly make attributions regarding the cause of our own and others' behaviours. Perceptual errors lead to biased interpretations of our social world.



Creative Commons License: Not to be altered or sold. Author must be attributed.

* adapted from Buster Benson's blog "Better Humans"