

Cognitive Bias

Authored by
mohammad looti

November 19, 2022

RECOMMENDED CITATION

mohammad looti (2022). *Cognitive Bias*. PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=39404>

A cognitive bias is a pattern of deviation in judgment that occurs in particular situations. Implicit in the concept of a "pattern of deviation" is a standard of comparison; this may be the judgment of people outside those particular situations, or may be a set of independently verifiable facts.

Cognitive biases are instances of evolved mental behavior. Some are presumably adaptive, for example, because they lead to more effective actions in given contexts or enable faster decisions when faster decisions are of greater value. Others presumably result from a lack of appropriate mental mechanisms, or from the misapplication of a mechanism that is adaptive under different circumstances.

Cognitive bias is a general term that is used to describe many observer effects in the human mind, some of which can lead to perceptual distortion, inaccurate judgment, or illogical interpretation. It is a phenomenon studied in cognitive science and social psychology.

Overview

Bias arises from various processes that are sometimes difficult to distinguish. These include information-processing shortcuts (heuristics), motivational factors and social influence.

The notion of cognitive biases was introduced by Amos Tversky and Daniel Kahneman in 1972 and grew out of their experience of people's innumeracy, or inability to reason intuitively with the greater orders of magnitude. They and their colleagues demonstrated several replicable ways in which human judgments and decisions differ from rational choice theory. They explained these differences in terms of heuristics, rules which are simple for the brain to compute but introduce systematic errors. For instance the Availability heuristic, when the ease with which something comes to mind is used to indicate how often (or how recently) it has been encountered.

These experiments grew into the heuristics and biases research program which spread beyond academic psychology into other disciplines including medicine and political science. It was a major factor in the emergence of behavioral economics, earning Kahneman a Nobel Prize in 2002. Tversky and Kahneman developed prospect theory as a more realistic alternative to rational choice theory.

Critics of Kahneman and Tversky such as Gerd Gigerenzer argue that heuristics should not lead us to conceive of human thinking as riddled with irrational cognitive biases, but rather to conceive rationality as an adaptive tool that is not identical to the rules of formal logic or the probability calculus.

Types of cognitive biases

Biases can be distinguished on a number of dimensions. For example, there are biases specific to

groups (such as the risky shift) as well as biases at the individual level.

Some biases affect decision-making, where the desirability of options has to be considered (e.g., Sunk Cost fallacy). Others such as Illusory correlation affect judgment of how likely something is, or of whether one thing is the cause of another. A distinctive class of biases affect memory, such as consistency bias (remembering one's past attitudes and behavior as more similar to one's present attitudes).

Some biases reflect a subject's motivation, for example, the desire for a positive self-image leading to Egocentric bias and the avoidance of unpleasant cognitive dissonance. Other biases are due to the particular way the brain perceives, forms memories and makes judgments. This distinction is sometimes described as "Hot cognition" versus Cold Cognition", as motivated reasoning can involve a state of arousal.

Among the "cold" biases, some are due to ignoring relevant information (e.g. Neglect of probability), whereas some involve a decision or judgement being affected by irrelevant information (for example the Framing effect where the same problem receives different responses depending on how it is described) or giving excessive weight to an unimportant but salient feature of the problem (e.g., Anchoring).

The fact that some biases reflect motivation, and in particular the motivation to have positive attitudes to oneself accounts for the fact that many biases are self-serving or self-directed (e.g. Illusion of asymmetric insight, Self-serving bias, Projection bias). There are also biases in how subjects evaluate in-groups or out-groups; evaluating in-groups as more diverse and "better" in many respects, even when those groups are arbitrarily-defined (Ingroup bias, Outgroup homogeneity bias).

Some cognitive biases belong to the subgroup of attentional biases which refer to the paying of increased attention to certain stimuli. It has been shown, for example, that people addicted to alcohol and other drugs pay more attention to drug-related stimuli. Common psychological tests to measure those biases are the Stroop Task and the Dot Probe Task.

The following is a list of the more commonly studied cognitive biases:

Framing by using a too-narrow approach and description of the situation or issue.

Hindsight bias, sometimes called the "I-knew-it-all-along" effect, is the inclination to see past events as being predictable.

Fundamental attribution error is the tendency for people to over-emphasize personality-based explanations for behaviors observed in others while under-emphasizing the role and power of situational influences on the same behavior.

Confirmation bias is the tendency to search for or interpret information in a way that confirms one's

preconceptions; this is related to the concept of cognitive dissonance.

Self-serving bias is the tendency to claim more responsibility for successes than failures. It may also manifest itself as a tendency for people to evaluate ambiguous information in a way beneficial to their interests.

Belief bias is when one's evaluation of the logical strength of an argument is biased by their belief in the truth or falsity of the conclusion.

Practical significance

Many social institutions rely on individuals to make rational judgments. A fair jury trial, for example, requires that the jury ignore irrelevant features of the case, weigh the relevant features appropriately, consider different possibilities open-mindedly and resist fallacies such as appeal to emotion. The various biases demonstrated in these psychological experiments suggest that people will frequently fail to do all these things. However, they fail to do so in systematic, directional ways that are predictable.

Cognitive biases are also related to the persistence of superstition, to large social issues such as prejudice, and they also work as a hindrance in the acceptance of scientific non-intuitive knowledge by the public.