Cognitive Biases

There is some truth to the saying that “The mind works in mysterious ways” and yet with careful study and analysis of the brain and the cognitive processes we get mind-boggling insights into how our brain is inclined to follow certain heuristic patterns and processes when estimating quantities or predicting events. Even though there is some logic to it, these processes are not strictly mathematical, which results in biases in our judgement profoundly impacting our decisions.

Being an engineering graduate in Information Technology, whenever I am back at home or in my native place, I am often pestered with requests to fix any computer, mobile phone, or laptop that is not working. Especially the not-so-educated older members of the family assume that this is what I do as a Software Engineer. It is a classic example of Representative Bias that involves an “Illusion of Validity”. The stereotype that computer engineers are supposed to fix broken computers and mobile devices is an age-old idea that is still prevalent amongst the less educated population in rural areas which causes errors in judgement.

Another example of representative bias is known as the “Gambler’s Fallacy” which I experience every time I play DOTA2. The game is a 5 vs 5 battle arena where I am paired up with 4 random people. Whenever I lose 3-4 games in a row, I always end up playing a few more. Often, I end up losing in the extra games that I play. The unfounded idea of finding high-ranked teammates after a few losses and that of a win being due after continuous losses gives a false sense of hope that pushes me to play more.

In my hometown, I and my family always prefer to buy shoes and apparel from Adidas. However, when other relatives are in town, we shop in different stores and almost always end up finding more variety at much more affordable rates. Yet, Adidas is our go-to store. This is a good example of an Availability Bias due to the “retrievability of results”. Our familiarity with Adidas – the brand name, the product quality, familiarity with the salesmen, and the manager (who happens to be a family friend) convinces us to revisit the same store even though we know we have better options available.

Anchoring Bias occurs when estimates are made by starting with an initial value which is then adjusted to yield a final output, but the output is influenced by the starting points we choose. While working for HPE as a software engineer, my team followed the Agile Process Model of Development where every quarter was divided into sprints. At the beginning, of each sprint, we held meetings where the team was supposed to assign points (number of 8-hour workdays) to User Stories which were essentially software development tasks divided into small chunks. The manager and scrum master used to assign some default values to each story in consultation with the Tech Lead which was later modified. However, these initial values had a big influence on how the team looked at a task, and generally, the change in story points was not more than two or three. Often, later during the development phase, we came across the realization that a story was not as small or simple and could have been further subdivided into smaller subtasks. Conversely, the case when a task that appeared to be huge initially but was later identified as simple and less time-consuming was also quite common. The anchor set by the initial values assigned by the scrum master and “insufficient adjustment” (owing to lack of proper study of the user stories) by me and my teammates is a clearly identified case of anchoring bias in this example.

This paper on cognitive biases gives us an amazing perspective on how a plethora of decisions that we take in our daily lives are based on estimations that our brains perceive to be correct but are found to

be flawed when looked at from a more logical angle backed by concrete mathematical proofs. Knowledge of these biases helps us be more aware so we may avoid them in future decisions.

References:

1. Tversky, A., & Kahneman, D. (1975). *Judgment under uncertainty: heuristics and biases utility, probability, and human decision making* (pp. 141–162). Berlin: Springer.