

Have you ever seen your friend act so stupid? Did it make you surprise that “How can such a clever person be such a fool?” As a matter of fact, we all act foolishly. Mostly it is because we are liable to make common mistakes.

This book summary provides tools and methods also called “mindware” that will assist us in thinking logically and how to avoid common mistakes in the nearest future. Within this short time, you will also learn how to best to use information gotten from study results, other people and the news so that you can become objective.

Correlation is not the same causation.

Do you know that countries where the people have higher average IQs also enjoy higher average wealth? Well, this is true, but can we say that being in a smarter country makes you become rich?

It is very easy to falsely make assumptions that one thing causes another thing to happen because both things happen at the same time particularly if it is something we believe in already. However, before we continue; let us define a few basic statistical concepts.

For example, correlation: if A and B occur at the same time, then A positively correlates to B. However, if A occurs only without B and B only without A, then the relationship is a negative correlation.

This is very essential because we are prone to assume that B is caused by A or vice versa because they are correlated. For example, let us look at the following proven scientific correlation. Averagely, people who attend churches are less likely to die prematurely than people that don't.

With this information, if you are a believer of good; you might have this thinking that believing God increases one's life expectancy. There you go; you have changed correlation into causation. Because both situations correlate to one another does not necessarily mean one causes the other.

Definitely not. As a matter of fact, assuming causation between situations that are correlated could lead to errors. For instance, in the 1950s during the summer, there was a clear correlation between polio cases and the consumption of ice cream; a lot of people were taking ice cream a lot of people were contracting polio. Would the prohibition of ice cream have helped reduced the epidemic of polio? No, it would not have.

This is because it is clear that ice cream does not cause polio. However, polio is spread by swimming in pool water and similarly, ice cream and swimming pools are popular in the summertime

Now we know that correlation and causation are not the same, let look at the first example.

Rather than making assumptions that intelligent citizens are what makes the countries wealthy; it would be smart to look at this from another perspective. Countries that are wealthy mostly have high health-care and education systems which produces people with higher IQs.

We consider evidence that fits with our assumptions.

Everyone would consider themselves as an objective and rational person , not a person that can be easily misled. As a matter of fact, we depend on strong mental shortcuts that twist our judgment.

Truthfully, specific characteristics can make us susceptible to see a connection between things even if there is no connection. We often do this because we see some objects and characteristics as a representative of the others. For example, genitals signify sexuality and weapons signify aggression.

Therefore, when a person sees another person with a full signifier, they immediately make conclusions. For example, the might view someone holding a gun as an aggressor even though the person is just a museum attendant hanging an exhibition.

This happens because of a mental shortcut known as the representativeness heuristic. As a result of this mind trick, even clinical psychologists are misled by what they're prepared to see.

For example; in an experiment, psychologists were given a series of fake patient cards. Each one had detailed symptoms of the “patients”, as well as their responses to an inkblot test.

In the cards, it was written that some of the patients saw genitals in the blots of ink, a fact that most people would assume that these patients had sexual problems. This was exactly the assumptions of the psychologists. Although the experimenters had rigged the cards so that the “patients” who saw genitals were less likely to report sexual adjustment problems. It was reported by most of the psychologists that this particular group of patients experienced a greater occurrence of such issues.

However, you can as well be predisposed to not see a relationship between individuals. For examples, when the psychologist was told that a negative correlation exists between seeing genitals during inkblot tests and sexual adjustment problems which is contrary to their expectation; they argued that the clinical experience pointed to a positive correlation.

In reality, there’s no relationship between the two, and their clinical experience showed that. But the representativeness heuristic caused them to remember the cases that meet their expectations.

Humans fear risk more than they like to gain and are likely to overvalue what they own.

Imagine you were approached by someone with a wager. And they flip a coin: tails you win \$120, heads you lose \$100. This deal is clearly great, but does that guarantee that you would take the deal?

In most cases, you would not take it. People are more interested in escaping losses than getting gains. This is called loss aversion by Economists. Different studies have shown that people would rather avoid the possibility of loss completely than take a risk even if they have a higher chance of winning. The pain of losing is double as acute as the excitement of winning for most people.

For example, in a study; most of the participants rejected a good deal like the one mentioned above. They did not want to enter the bet except they had to chance of winning at least \$200 which is double the amount they risked to lose. This caused them to lose out on favorable odds.

However, loss aversion is not the only bias that leads to irrational behavior. People have the tendency to place a better value on objects that belongs to them; thanks to the endowment effect.

For example, any rational person is aware that a \$5 coffee mug is worth just that whether it belongs to them or not. However, a famous experiment showed that people's beliefs do not align with this fact.

In the experiment, half of a class was given good coffee mugs that had university logo on it. The other half got nothing. The students that were not given mugs were asked how much they would pay to have one and the students that were given mugs were asked how much they were willing to sell theirs for.

The results were illuminating. Averagely, the price of the students that had the mug was double the amount the other students were willing to buy it. This difference clearly shows the fact that owning an object changes the way its value is viewed.

Therefore, our reasoning is flawed. How can we change this?

Conduct your own research and don't trust all the things the media says.

In this era of various media, it can be complicated to know who to believe or trust. For example, let's say you have a baby and you hear an expert on TV that says small children should be kept away from germs. Is this advice reasonable?

Fortunately, there is an easy way to know and it doesn't need you to experiment with your baby.

Start by gathering research that is applicable to your question. You can do this by researching studies that target more or less the same question as yours but are directed at different situations and groups. This approach will hinder you from concluding from a single correlation.

While studying the effects of germs on babies you might as well find studies that draw connections between germ exposure and allergies. You might even find other studies that say East Germans are less likely to have allergies than West Germans; that Russians are less likely to experience allergies than Finns and that farmers have fewer allergies than city dwellers.

All these studies are constructed on one question: Which of the two groups is more likely to have allergies?

However, after you gather your information, you now have to interpret it by asking yourself how the study fits with your own question. For instance, you can think of why the study came up with its result and how the results from all the studies relate to one another.

Therefore, you can assume that, recently, East Germany and Russia were less hygienic than West Germany and Finland. Also, you can assume that people that live in farms are more exposed to various bacteria than people who live in the city. Since people on farms were less affected by allergies than others, we can make an assumption that people that live in places with a lot of germs are less susceptible to autoimmune diseases and, so keeping your kids away from such germs could actually be bad for their health.

By applying the laws of logic, you can be protected from subjective responses.

Have you ever listened to the illogical talks of a politician and you wonder, “What’s this even supposed to prove?” Aristotle probably felt the same while he was listening to pathetic arguments in the Athenian assembly. Due to this, Aristotle came up with the techniques of reasoning that allow anyone to study the validity of an argument.

These techniques are the basics of formal logic, a method that was useful back then in the days of Ancient Greece and just as useful now.

Formal logic works by representing concepts like this: if premise 1 and premise 2 are true, then the conclusion should also be true. For example, consider the spam email messages that people continuously receive with subjects like, "Get \$6000 with this easy trick!" To know if the conclusion is true we merely need to evaluate the premises.

In this situation, the first premise is that the person that sent the email knows a trick that can make a person get \$6,000 with little effort. The second premise is that, rather than the sender using his trick to make \$6,000 repeatedly; the sender uses his time to send strangers email about the trick. How plausible is it that both are true?

Therefore, logic works by removing real-world influences of previous beliefs to make reasoning more objective. By doing this, you will only consider facts because you will be less influenced by prejudice and bias.

For instance, let's say you are trying to pick someone for an engineering job. In order to avoid bias against women, you can hide the gender of the candidates you want and you include characteristics that make an applicant stand out such as "realized successful projects in prior positions." After, if a person fits all the criteria you listed, you can tell that they have the potential of fulfilling the job irrespective of their gender.

Mindware: Tools for Smart Thinking by Richard E. Nisbett

Book Review

We all want to be a rational thinker, but there are common and invisible characters that hinder us from thinking objectively. By becoming aware of such habits and stopping ourselves from doing them, we can escape irrationality and we will be able to make choices that are logical.

Make use of Occam's Razor to find the simplest solution.

There are sometimes where we are faced with circumstances in which over one theory is correct. How do you come up with which one to believe in? Follow this method named after Franciscan friar William of Ockham called Occam's Razor. It simply states that, make sure you

go with the simplest theory always. Why? Actually, theories that are easy and simple are easy to test and model mathematically. Also, difficult theories hardly explain the evidence as simple theories do.

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