

Making difficult decisions can put the most pragmatic people in a difficult situation. When we face with too many options or we confuse about what the future brings, the best solution seems like ignoring. Moreover, people have blind spots and biases so future outcomes may be too complex to predict.

Fortunately, there are many methods that can help us to overcome this obstacle and these methods can be applied in everyday solutions or even monumental decisions that require a lot of time for processing. At your request, better decision making can be as certain as a mathematical model or as simple as reviving it.

When we decide, even George Washington; get caught in our blind spots.

The Revolutionary War in North America continued at full speed in the summer of 1776. The Americans, led by George Washington, tried to get rid of the British government's chains; but, they weren't allowed. Washington was left in a quandary when they began to see their fleet with New York in their sights. Obviously, an attack was coming but how the British would launch it was less clear.

This is an example of how complex decision-making situation can happen in real life.

A full-spectrum decision, Washington faced with, means that countless factors had to be taken into account for the right decision.

There was a lot to think about in the battle of New York for Washington. Where were the landing sites for British ships on the coast of New York? What would have an effect on the strong flows of the East River to move their troops from New York to Brooklyn?

Also, the British can make against New York City's fortifications and there was a potential risk for Washington's own soldiers so he had to take into account the possible damage. He even had to think about America's domestic policy at the Continental Congress, which demanded it stands firm against the British.

Needless to say, Washington had a hard time to make a difficult decision and he finally made a wrong decision. Actually, he was wrong when he did it very firstly. He shouldn't even try to

defend New York. It would be easier to retreat in the interior against superior British forces. However, his mistake was not special to him: People tend to ignore blind spots while making decisions.

This example is known as loss aversion which represents common error in human reasoning and it is a characteristic innate to humans. In the long term, even if it is better to do the opposite, we prefer to resist losses instead of seeking earnings. However, Washington was wise to keep them out until his troops were completely crushed. When he began to lose power, he signaled a quick retreat. He was still a natural leader, and the Revolutionary War would ultimately be won in spite of very difficult decisions along the way.

Making good decisions needs different perspectives from various people.

In general, the bosses make important decisions in governments and corporations that represent the function of hierarchy. Unfortunately, the way of the best decisions is not that. In real life, making complex decisions requires the support of many different perspectives.

Here is a good example: The water department for the Greater Vancouver area, having a problem related to population growth. So, the freshwater resources available required expanding. This was a hard decision for some people. The welding options were used to construct a pipeline to remote lakes or to drill wells near a nearby river, using the three existing reservoirs.

The department took into account numerous perspectives in order to make the right decision. That included asking people who live near the potential resources, indigenous tribes with sacred connections to the waters, environmental organizations, as well as health and water-security specialists.

This comprehensive approach to problem-solving leads to a better decision because the possible advantages and disadvantages of each solution are clarified as part of the process. As a result, the solution of a one-kilometer-long earthquake-resistant pipeline emerged in order to

draw water from a dam on the Coquitlam River. Shortly, various perspectives make better decisions.

Psychologist Samuel Sommer also supported this with a series of studies around 2010. He created mock trials to test the juries' process of decision-making. According to the results, racial juries were better than just white juries when doing their jobs. He found that the evidence submitted to diverse juries was further interpreted and that more accurate in recalling the facts of the case and had longer and more judicial debates.

Also, ethnically homogeneous groups tended to take decisions very hastily and to make prejudiced assumptions without questioning. Scientists have argued that this is also true for homogeneity in gender or political orientation. However, there needs to be more study to support that view.

The future cannot be predicted by an average person or even by an expert.

If people know what would happen in the future, making a decision would be pretty easy. If you were aware of where the property prices would fly in twenty years, it would not be wise to buy a property from there. Unfortunately, people are terrible in predicting the future.

Philip Tetlock, the political scientist, proved this in his "forecasts tournaments" more than 20 years ago. The participants competed against others to predict what would be the future for issues like the environment or gender relations. The questions were based on long term political and economic developments: Would a member of the European Union leave it within the decade, or would the US experience an economic decline over the next five years?

Tetlock collected 28,000 predictions from these forecastic tournaments and then waited to learn the accuracy. He also compared those estimates with two simple algorithmic predictions. Although one algorithm foresees no change, the other showed that change would continue at the current rate. Human predictions with difficult inevitability were almost always less accurate than standard estimates for the continuation of current trends.

The average was too much for Joe. What about the experts? As a result, it turned out that they were weak at predicting the future. Incredibly, experts in economics and politics were worse than those without expert knowledge, according to Tetlock's experiment.

This may seem surprising; non-experts did better with a broad view and by taking into account various factors. This is a feature of the best predictors of the future. When asked about the state of the economy in five years, the generalists considered market trends, as well as technological innovations, education, agricultural practices, population growth and more. In contrast, experts couldn't get out of their fields. The meaning of expert turned that they made wildly false predictions.

For example, were believed that capitalism will break down or growth will reach unprecedented levels.

There are good reasons why it is so difficult to predict future events, and in the next section, we will learn more about it.

Unpredictable convergence factors determine future events and these cannot be predicted from current trends.

Unfortunately, it is not always true as a rule, but people believe that events will continue as they are uncertain when they are concerned about the development of current trends. However, chaos and unpredictability cannot be ignored while predicting the future.

In 1944, George Orwell started to write his imminent dystopia, 1984, according to his hypothetical predictions while Nazi power was influential in Europe He also witnessed the rise of fascism in the previous decades, and so it was logical for him to foresee the continued trend of the government dictatorship system. Thankfully, this was not the case.

In reality, future events which are generally unpredictable because of their nature occur with the combination of various factors. Consider the unexpected rise of the personal computer. As we know, many breakthroughs in many areas converged at the same time so computers appeared.

Developments in microwave signal processing and silicon circuits have also improved, and mathematics and robots have made great strides forward.

If you wanted to predict the rise of computers, you should know that an increase in the potential of computer programming languages depends on developments in math. Likewise, you must have decided that the silicon circuits will be better than the vacuum tubes used in old-fashioned computers. Finally, you should know that old technologies such as radio waves must be used again to transmit binary information. Clearly, there was no one to predict the coming not only possible but general.

Use red teams, plan and predict even covert operations.

As we've seen, predicting the future is not an easy task. However, there are techniques that can help in prediction and decision making. Here's an increasingly popular technique: Using red teams.

A red team is a group created within an organization. The mission of the team is acting as an enemy while the larger organization makes strategic decisions. For instance, an army unit might be considering options to launch an effective attack. Once they have determined their plans, they can move on to a red team and identify what they can do against a potential attack by entering the enemy's mind.

It was proven that using red teams is highly effective in various areas. Famously, the operation that resulted in the death of Osama Bin Laden in May 2011 was depended on the red team taking part in the decision-making process. The American National Counter-Terrorism Center planned to attack a mysterious composition, suspected of hiding Osama Bin Laden in Abbottabad, Pakistan. The red team thought Bin Laden could be there in only 50/50 chances. However, more critically, their input meant that the US government was better prepared for the unexpected.

In fact, the red team had determined that having airplanes from an unauthorized US army over Pakistan's airspace could lead to problems. As a result, the government tried to establish diplomatic relations with Russia and the shipping network in the Baltic Sea in the months prior to the attack because all had an additional route for the covert squad to enter and leave Pakistan.

If the Pakistani government reacted aggressively to the covert operation, the team was likely to be needed. Of course, they found Bin Laden in the compound thanks to the preparation of the red team.

Cost-benefit analysis is used by governments while making the decision even for environmental protection.

Ronald Reagan, a US president, is largely defined by his conservative agenda. Consider his desire to reduce taxes and government spending, as well as to strengthen the military. However, less well-known is the advocacy of cost-benefit analysis when deciding on his ideas that found bipartisan support.

Reagan signed an Executive Order in February 1981. This required cost-benefit analysis for each new regulation under government oversight, which required the listing of potential benefits and costs of possible new regulation. Critically, this remit extended beyond monetary terms. The proposed measures had to show the overall benefit. Finally, it was necessary to examine the managed alternatives to ensure the implementation of the best solution.

Cost-benefit analysis is visible for the benefit and nowhere is it as clear as it is in environmental protection. A cost-benefit analysis was used to support environmental protection under the Obama administration and the social costs of carbon dioxide emissions were calculated simply.

Long-term effects and costs of the carbon released into the atmosphere were examined by coming together of experts from the Office of Energy and Climate Change, the Council on Environmental Quality and many other government departments and agencies.

The predicted social costs included decreasing agricultural yields, destructive weather events, and forced population migration due to rising sea levels. According to the experts, the social cost was \$36 per ton of carbon dioxide released. Although many external parties still think it was a conservative calculation, environmental costs have been converted into money by the US government for the first time. This was the first step to make the issue more serious in future government decisions.

You're a human or machine, decision-making is supported thanks to linear value modeling.

Sometimes decision-making requires challenging negotiations. Thankfully, there are tools that can help. Linear value modeling, a method used in statistics, can help in making complex decisions by letting you find possible options and value them according to the value you gave.

Suppose you decide whether or not to get married. Here are the value-based considerations: Finance, the possibility of having children, the value of free time alone, and the desire for a life companion.

For each evaluation, you assign a value that is calculated on the likelihood of satisfaction according to the status of getting married or not. Therefore, if you are single, your chances of having a child are 30% and if you get married you can have 70%. Then weigh every possible outcome. The weighing scale ranges from 0 to 1, where 0 is unimportant and 1 is very important. So, if having a child appeals to you, its score might be 0.75 while your freedom's score is 0.25. Then multiply these with the respective likelihood percentages previously calculated. After you make the totals, you know which decision to choose.

The use of linear value modeling is not limited to humans. This process can also help machines to make decisions. Most probably, linear value modeling will begin to be relied upon as self-driving cars become more common. They will have to calculate the benefits of the results based on the given maneuvers and the probability of the results that actually arise.

Imagine a pedestrian who jumps on two-way right-hand traffic, while a self-driving car is on the road. The car should now evaluate the situation and make a choice. If it slides to the right, it is less likely to collide with another vehicle, but the risk of a pedestrian collision increases. This can be easily fatal for the pedestrian, so avoiding this result can have a priority in the car's value system. If the car is not driven too fast, it may choose to move left. It is likely that it will hit another vehicle, but the car may be closer to this result because this is unlikely to result in death.

There are limits in mathematical decision-making but reviewing things is also a long way.

You can think that mathematical decision-making is a great idea but that means people who can do the sums can also make good decisions. Thankfully, that's not the case. When people have less mathematical ability, they can still make great decisions by doing a little ruminating.

You can see that making a decision works like mathematical analysis. You can think of different options that you can use for a long time by compressing something. Here is the key: Allow yourself enough time for this. In this way, you will keep important options in mind and solve a set of conflicting advantages and disadvantages.

It is important to rest after considering all the possibilities. Spend free time. You can let your mind to be relaxed by going for a long walk or getting creative. This restores the brain's default system, that is, the daily functioning part of the brain while performing daily tasks, and creates the time to filter out all this information and make a conscious intuitive decision.

As we mentioned before, mathematical decision-making has its limits and this is a disadvantage. Let's reconsider the strike on Osama Bin Laden's compound. There was no mathematically definitive way to calculate whether Bin Laden was really there or not regardless of the work done by the red team. The Obama administration's assumption about the position of Bin Laden and the careful examination of the situation in every way was a slow process. Although they knew there was only a 50 percent chance of being there, they trust intuition.

We learned a lot as it was never easy to make decisions and even mathematics could not always lead you to the finish line. However, you will be on the road to making a sound and informed decision if you make a few sums and spend the time to review the variables and results.

Farsighted: How We Make the Decisions that Matter the most by Steven Johnson Book Review

Decision-making is difficult for each of us because people have difficulty in predicting the future outcome of any given decision and whether this outcome makes them happy or not. Therefore, it is important that you take time to decide. A more technical and mathematical approach or the traditional approach can be used for planning all options and variables.

You can build diverse teams.

As this summary shows, the group's decisions are better when there is diversity within a group. So, when you create a project team next time, make a conscious effort to involve people with different backgrounds. As the diversity of experience increases in the group, better results will be achieved by helping the group to make more representative decisions.

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