

The Glass Cage, by Nicholas G. Carr

Book Review

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Abstract

In this book, the author has presented a detailed and mostly chronological account of automation's progress. He presents a striking account of technology's impact on the human world. More focused on the harmful effects, the book presents an anecdotal account of some major technological milestones and how it negatively affected humanity. *The Glass Cage* forces you to think whether some of the major technological achievements proved to be achievements at all. Though the book is very convincingly and wittily written, it is easy to see the pessimistic view of the author towards the progress of automation.

Introduction

In the beginning chapters of the book, the author tells the story of how he learnt to drive his instructor's Oldsmobile. The car had a manual transmission, and it was difficult and tricky to maneuver the car. Later, he bought a Subaru and then a Ford Pinto. The latter had an automatic transmission and the author did not need to do the same maneuvers that he had to do while he was learning. He was freed from those tasks because of the automation. It allowed him to focus less on the handling of the car's clutch and enjoy the ride. However, the joy soon faded out – as expected. He enjoyed the leisure for a while but then he started to miss the feeling of involvement while driving.

This is the main theme of this book. It presents multiple examples and arguments about how automation and machines are eroding away at the human abilities and skills of people.

The Paradox of Work

Automation frees us from many tasks, but what are we supposed to do with the time that is saved? Not having to do anything is not always good. Boredom is like a disease. The human mind craves work. Generally, people believe that rest makes us happy and content. Work is stressful and everyone wants to finish and return to their homes. However, this is a trick of our mind.

The author presents the story of an experiment carried out by a University of Chicago professor in the 1980s. It described a phenomenon called the 'paradox of work.' In this study, he concluded that people are most happy when they are involved in work and not when they are sitting leisurely at home after work hours. When people are working, they are completely involved in a process and negative feelings and thoughts are unable to enter their mind. When they are sitting without a purpose, they have anxiety, stress, and all kinds of negative thoughts. When we outsource our work to automated machines, that is what we are losing – a sense of flow when we are working ourselves. We have more free time and our mind conjures up these negative emotions. As a result, we tend to feel worse.

Automating Aviation

Autopilot in airplanes is not unheard of. Nowadays, every flight operates on autopilot for most of the duration of its journey. There are accounts of how the pilots do not need to do anything other than lift-off, touchdown and monitor the screens during a flight. The autopilot oracle handles everything for the pilots, making the journey 'safer' for those who tend to trust the all-seeing all-knowing computer more than the vulnerable human that is the pilot and his crew.

One could easily imagine what effects it has on the pilots' skills. There was an age in aviation where the pilots said that they could feel the parts of the plane while flying, much like a bicycle, because of all the manual maneuvers they had to do. Those pilots were the most skilled. But now, you do not need so much skill. The need and abilities have plummeted. For the author, this is a cause of great concern. However, it is hard to agree with him here.

If we look at the number of flight accidents that happened before and after autopilots, the difference is noticeably clear. Computers are simply better at flying than humans. Same was the case for chess. There is something amazing about a human being unbeatable at chess or an aviator being a living legend of flying. But these processes are so computational and

patterned that the weakest computer could be programmed to do it as good as the best human. Is the loss of skill in piloting as important a concern as the lives saved by autopilots? I do not think so.

With the point of view of pilot skills, the arguments are compelling. But it is hard to really connect with the concerns presented. Compared to the safety automation has managed to provide in commercial aviation, the tradeoff is minimal.

Healthcare and Automation

Unlike commercial flights, the case of automating healthcare is opposite. Here, the author's concerns are very much valid.

During George Bush's and Obama's presidency, there was a big push towards automating the healthcare system in the US. The big tech names presented a report on how replacing paper records in hospitals across America with digital storage and machines could make everything much more accessible and foolproof. This push led to the proposal of machines in other areas – such as the ones for prescribing drugs and medical tests to patients. Convinced by the claims of such reputed names and reports, the presidents allotted a huge chunk of the budget for exactly this purpose. Tragically, it did not work as planned. The machines failed to communicate with each other because of the different protocols used by their manufacturers. There was a shortage of skilled people who knew how to use the machine. Many more issues emerged.

Today, the healthcare system of the US is in a sordid condition. Unlike aviation and flights, health and diseases are not algorithmic. Any attempt to detect a disease by some pattern is often a failure. Statistical methods have been famously successful in detecting respiratory problems from lung X-Ray images, patient readings, etc., but they are far from replacing an actual doctor. The nature of diseases itself proves to be a perplexing task for a machine to ever master. At least not with the current approach, where everything is expected to behave like a statistical model.

Because of the algorithm-heavy and checkbox model of diagnosis, the patient reports all look the same. The machines cannot judge whether the 3-year-old MRI report is still relevant or not, so they always ask for a new latest test. It shoots up the cost of a simple checkup. It also delays the treatment which could prove fatal in some cases.

And what about empathy? The machines that are prescribing drugs and taking patient reports are not sentient beings. They cannot read the patient like a human and sense the uneasiness in their behavior or speech. Programming a few empathetic sentences and some pattern recognition

into a machine is not teaching them empathy. It is extremely important to be kind to unfortunate patients and their loved ones. For now, that is something only a human can do. Teaching empathy to humans is already arduous, it will be long before we can teach that to the machines.

Effects of Automation

The conclusions of this book are not revolutionary. It is a very noble and brave effort by the author to question technological advances. If an algorithm can be made more efficient, it is considered good. If a statistical model can be made to perform better on a dataset, it is considered okay to use whatever means necessary to achieve that. Hardly a thought is given to the ethical nuances of the personal data being used to achieve that performance.

Despite this, only a technophobe will fail to notice the odd presentation of the author's arguments. It feels as if the conclusions have been drawn already and the anecdotes have been cherry-picked to support that conclusion. The book is strong and compelling throughout, not to mention very engaging to read. However, there is a lot of tunnel vision. The author deliberately forgets to consider the counterarguments that should have been mentioned. For example, the case for preferring human doctors over machines seems better, but in flights and industries, putting machines in place of humans has proven to be a much more effective solution. Flight accidents have reduced, and countless factory workers have been saved from the horrendous working conditions prevalent in the post-industrial era.

GPS is a powerful technology with its own share of geopolitical controversies. It is true that GPS providers such as Google Maps tune the navigation according to the data received from users. It shows you the restaurants and places that you are most likely to consider during your trip. If one did not want Google Maps to be their tourist guide, they can simply turn off the app and go about their journey. Personally, GPS has proved to be a lifesaver for me countless times. There is a skill in using the app to get to the place where you want to. For the people who have extensively used this app, it is apparent that there is a lot of understanding involved. While it is easier than exploring a new city with nothing but a paper map, it is also not as if you are getting teleported magically to your destination simply by opening The App.

The author does raise some important questions. One of those is the loss of skills and cognitive abilities in the users of some automation tools. The smartphone apps are now being designed to tap into one's psyche and keep them as involved as possible. While the creators of those apps claim that

they want to make people's lives easier by designing tools that take little effort, the effect of this easiness is that people keep coming back to it. There are studies that show that people are experiencing anxiety and cognitive loss after using social media extensively. There is indeed some flaw in the way such technology is being created. They are focused too much on making lives easier in the short term that they fail to consider the much worse ill effects it will cause when people get too dependent on it.

Morality and Ethics

Another question is about morality and ethics. Going back to the anecdote about cars and automation in form of self-driving vehicles, the author presents several questions. What would a self-driving car do if your neighbor's dog comes in front of your car while it is at a speed of 40 miles per hour? Would it decide to risk your life by turning the car? Would it decide to run over the dog and save you, the owner? Split second decisions like these are hard to program into an algorithm.

Take the example of automatic lawnmowers and robotic vacuum cleaners. When a person sees a small bug or animal in front of the lawnmower, they are most likely to pick it up and throw it out of the way. While cleaning if you see a small bug or insect on the floor, you would prefer to kick it out of the way rather than smashing it to death. But machines do not have such differentiation. For them, an insect on the floor is the same as any other dirt that they have been tasked with cleaning. It is going to suck the insect to its death, same as a hair strand or a piece of paper. The robot lawnmower will not cringe at the thought of its fast blades cutting an unsuspecting bug into a hundred pieces. Humans do have such sympathy. Ethics and moral values cannot be defined via any algorithm or statistical model just yet.

Conclusion

Blind technological advances as well as constant skepticism both hamper the progress of humanity. There needs to be a healthy balance between the two. Automation is not the solution to every problem. It is the same as saying that every problem is a nail and all you need is a hammer. By weighing the long term effects of using a technology, we can make better decisions on how to use it. Instead of focusing on making humans technology-centric, the effort should be towards making human-centered machines. Only then can we ensure that we are on the path of progress without losing the essential qualities that make us human.