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Hello World: Exploring Human-Machine Relationships

"Hello World: How to Be Human in the Age of the Machine" is a book that discusses data science written by Hannah Fry. In this book report, I will provide an overview of the author and subject, followed by a summary of the main points and themes of the book. A response that relates this book to course themes will be shown in the end.

Introduction to the Author and Subject

Hannah Fry is a mathematician from the UK who focuses on patterns of human behavior, including relationships and dating. However, she is better known to the public for her presence in radios and televisions. Fry has written and hosted numerous television and radio programs on mathematics, science and technology, and her work often explores the ethical and social implications of developments in data science.

In Hello World, Fry aims to discuss how artificial intelligence and algorithms are having an impact on all areas of human life and society. For each of the different fields, Fry explores the advantages, limitations, and ethical considerations associated with these technologies, and guides the reader to consider and deliberate the potential implications of relying on machines in key decision-making processes.

Summary of the Book

"Hello World" is divided into 7 chapters that explore different domains where human lives were impacted by AI and algorithms. In my opinion, the question or theme that the author expects the readers to keep in mind is, “To what extent do humans, in fact, need to follow or even yield to machines or algorithms?”.

First, the relationship between humans and machines is evolving, and it is important to consider how we can work together to achieve human goals. The authors argue that we should not view machines as a threat to human autonomy, because their capabilities are ultimately determined by the instructions and parameters set by their human creators. However, in the "Power" chapter, the authors highlight how algorithms have the ability to shape our perceptions and decisions without our awareness, such as those used in search engines. Everyone needs to recognize that algorithms do not always reflect the full complexity of human experience or provide unbiased results.

In the chapter "Medicine", the authors give an example from the field of doctors to further emphasize the dominance of humans. Because of the vast number of cases and data at its disposal, artificial intelligence can certainly surpass human doctors in diagnosing diseases and developing treatment plans. But few patients will want to entrust their health to a machine. It's true that the rising cost of healthcare and the very complexity of medical procedures provided by human doctors, but the call for AI doctors ignores the need for patients to have human touch. As Fry states " When the benefits of an algorithm are overstated and the risks are obscured. when you have to ask yourself what you 're being told to believe, and who stands to profit from you believing it."(63). Assisting never means dominating and obeying. Humans handing over the power of decision and judgment is fundamentally is fundamentally the same as chronic suicide.

Second, the nature of prediction is built on mathematical models, and justice is not part of prediction. In particular, Fry discusses the changes algorithms have made to the justice system. Judges in England began to rely on recidivism values calculated by algorithms. If the algorithm classifies someone

as high risk and the judge deprives them of their liberty as a result, there is no way to determine whether the algorithm has accurately predicted their future, and since there is no way to verify the algorithm's predictions, we cannot know whether the judge believes the risk score is correct. Algorithms seem to be playing with human justice here. In Fry's view, justice is not only related to the outcome of a decision, but also to the process and values of the decision. While Fry didn't propose a solution, she raised questions about why the process of transparently implementing the algorithm and subjecting it to strict oversight has stalled. Continuing to use discretion as an excuse for injustice will only lead to a loss of trust in the justice system.

Last, using AI and algorithms means having to give answers to historical debates about morality and philosophy. The "trolley problem" scenario for a self-driving car is, in the event of an accident, whether the car will prioritize protecting the occupants and hitting pedestrians, or prioritize protecting pedestrians on the road and putting the occupants in danger. This question directly challenges our view of algorithms making value judgments about our own lives and the lives of others, because algorithms will prioritize protecting their own users when there is no better solution. Fry argues that if manufacturers do devise an algorithm that sacrifices themselves to save others, they could be heavily liable for it, since it is illegal to harm consumers. Therefore, Fry suggests that since each individual has his or her own moral considerations, allowing people to develop their own individualized ethical solutions for algorithms to practice may help certain groups in real life.

My Response to the Book

Fry used many practical examples to explain the ethical challenges and practical problems encountered in the development of data science. Despite recognizing the benefits of technology, Fry does not shy away from discussing the potential risks and unintended consequences that can arise. She urges readers to critically examine the impact of technology on society and to consider the broader implications of its use.

The most fascinating part of the book for me is "The Great Church of the Reverend Bayes". In order to prove the existence of God, Bayes in the 18th century quietly wrote down an unpublished formula for probability statistics. As a clergyman and amateur mathematician, his formula was plain, simple, subjective, and even dubious. The idea espoused by this formula is also unobtrusive: "After updating our initial beliefs about something with new, objective information, we are left with a new and improved belief.". Thomas Sargent, a Nobel laureate in economics, argues that artificial intelligence is actually statistics, but it uses a very gorgeous rhetoric, which a lot of formulas are very old, but we say that all artificial intelligence uses statistics to solve problems. Truly realizing that artificial intelligence is all about old algorithms running on high-speed computers excites me during reading.

In my opinion, there has never been technology against humans, because technological innovation always serves the purpose of helping people. In our class discussions about simulating loan thresholds, we explored the power and responsibility we have in determining whether to prioritize maximizing benefits or ensuring equal opportunities for all. Fry's book reinforces the notion that as data scientists, we must be mindful of the ethical implications of our work and strive for technology that enhances humanity rather than replacing it. In other words, data field workers should be the last line of defense for justice.

Algorithms only say how to archive the result, but are not responsible for explaining why. AI win predictions by relying on human-trained data and imitating human behavior, but they have not learned to be like teachers and professors who can explain to students the connotations and reasoning in XGBoost or grammar of graphics, as well as the variations and calculations of specific situations. Since I was born as a human being, it is impossible for me to be indifferent to anything related to human nature. Therefore, what we should be more worried about is not machines becoming people, but people becoming machines. In closing, artificial intelligence and algorithms are indeed gifts from God, and the solution to the occurrence of moral and ethical issues can only be reconciliation in the grace of God.

Works Cited

Fry, Hannah. *Hello World: How to be Human in the Age of the Machine*. London, Penguin Random House UK, 2018.

Sargent, Thomas. *Multi-Stakeholder Forum on Science, Technology and Innovation: 2018.* New York: Department of Economic and Social Affairs, 2018.