Career Episode Piece 2: Being ethical in research

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# Introduction and overview

Around 375 BC, the philosopher Plato discussed "ethos", the Greek word for "ethic", in his classics Republic. He emphasized the importance of ethics, quoting "For it is no ordinary matter that we are discussing, but the right conduct of life"[1]. Almost in the same era, an ancient Chinese philosopher and the founder of Taoism, Lao-Tzu, analyzed ethics and morality in respect of cultivation, governance and wellness in his book Tao Te Ching[2]. Since the sprout of civilization, ethics has evolved in an upward spiral, the shift of its definition is also been witnessed during the development of history, from the eyes of citizens in the ancient coliseums, to the sounds and slogans of demonstrators in the 21st century.

On the other side, alongside the evolution of human beings, conflicts and arguments regarding ethical problems are accelerating this endless progress in some way. In recent years, more clashes were happening in the scientific and industrial communities. For example, Google suffered a data privacy scandal in 2018, the data breach was caused by program bugs from Google+ API, which exposed 52.5 million personal profiles to the public[3]. In 2020, Yann LeCun, an AI scientist and the Turing Award winner, was accused by researchers because one of his algorithms was suspiciously racist issues[4][5]. In Yann's clarification, he said the algorithm was biased due to the improper dataset input by public users, not the AI system itself. Here, we see that both tech giants and individuals could generate ethical issues, and be influenced at the same time.

This episode keeps the focus on ethical problems, especially in the technology and research field. First, the definition of being ethical in research will be discussed. Then, the importance and essentialness of being ethical will be elaborated on with the writer’s own experience. At last, some suggestions for being ethical will be proposed.

# What is being ethical in research?

Ethics, the word referring to the reasoning and guidelines that should be followed in dealing with the interrelationships of individuals and society. More specifically, it contains not only norms of conduct in the management of relations of human beings, society and nature, but also the profound truths that govern behaviours according to certain principles. Research ethics is an ideology and the standards in carrying out scientific research, technology development, and other related activities.

Over the last half-century, science, technology and their relationship with society have changed dramatically. On the one hand, the boundaries between science and technology have gradually blurred. Scientists have been constantly intervening in and transforming the world, their scientific research influences nature, society and humanity itself. On the other hand, the boundaries that once existed between science and society are disappearing, due to the advanced research ability in this new era. Modern scientific and technological research is based on a tremendous amount of resources, innovations are often generated at the borderlands, and their findings are increasingly complex and uncertain. In contrast to traditional scientific experiments, modern research activities are often more difficult to terminate, because of the significant and catastrophic social consequences.

AI technology diffuses rapidly today, from Airbnb’s booking system and Tesla’s driverless cars to personalized recommendations of movies and foods, it brings convenience to our daily work and living. Artificial intelligence also supports decision-making in government and the private sector. However, the technology is also bringing new and unpredicted challenges, such as increased gender and racial bias[6], and the risks to personal privacy. Until now, we have not had a universal standard to address these issues.

# Why being ethical in research is important?

In the following discussion, one personal experience will be used as an example for illustrating the importance of being ethical in research.

Back in 2020, when the writer was studying in China, the college collected students’ personal information for their graduation, the dataset included the address, mobile number and gender of each student. During that time, students were studying remotely at home due to the pandemic. After a few weeks, some students received fake calls and emails from the college. They were asked to pay their tuition fee and transfer to a so-called official bank account. Telecom fraud is a new class of Illegal activities in the century of AI. In most cases, it is caused by data leakage and Internet viruses. In this story, school researchers and organizers should be responsible for their data collection, especially regarding sensitive personal information.

According to the Recommendation on the Ethics of Artificial Intelligence[7] from UNESCO, personal rights and interests should be protected and respected in each stage of any AI system. The safety and security of humans, the environment and ecosystems should be ensured by avoiding, preventing and eliminating unintentional harm and attack throughout the lifecycle of AI systems. Safe and secure AI can be achieved by developing sustainable and privacy-protective data access frameworks that facilitate the use of quality data to better train and validate AI models.

# How to be ethical in research and work?

First, research should focus on the wellness of human beings. For society, it should benefit the development of economics and is also environmentally friendly at the same time. Besides, it should promote the peaceful and sustainable development of society. From the individual point of view, being ethical in research implies the satisfaction of people’s happiness and security.

Second, being ethical in research means being respectful of any living. Scientific and technological activities should avoid any harm or potential threats to individuals’ safety and physical or mental health. For example, in Australia, the law asked researchers to consider the dignity of humans, personal privacy, the right to know[8][9], and the freedom of choice[10] during all stages. For the use of experimental animals, researchers and workers should follow the rules of 3Rs[11], which are reducing, reusing, and recycling.

Third, research activities should care about fairness and justice. Specifically, religious beliefs[12] and cultural conventions[13] are two major elements in research activities in Australia. Researchers and organizers need to treat different social groups in a fair and inclusive manner and prevent discrimination and prejudice.

Last, openness and transparency of activities are essential requirements for being ethical in research. For activities involving significant and sensitive ethical issues, information should be objective and truthful, published regularly with greater transparency. For example, Australia is committed to transparent reports on the international development program[14]. During the pandemic, Australia’s COVID-19 Development Response[15][16] captures the objectives, results and impacts in the fight against COVID-19 and to progress the 2030 Sustainable Development Goals.

# Summary

In this episode, the writer simply introduces the definition of ethics and ethics in the research and technology field. Then, one of the writer’s experiences is used to illustrate the importance of ethics in technology and research. In the end, four suggestions about how to be ethical in research are proposed.

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