Why Will Artificial Intelligence Replace Humans— or Will It?

Feng Yuxiao

Science, New Asia College

"AI would be the biggest event in human history.

Unfortunately, it might also be the last."

Elon Musk's words were quoted in the trailer of *Ex Machina* (A24), adding a terrifying sense of reality to this science fiction film. In the last few years, with the continuous emergence of AI movies and science giants' predictions (including Stephen Hawking's), people around the world have become increasingly concerned about the scary question: Will artificial intelligence replace us? (Liang and Lee 379–384). As a university science student, there is no denying that I am also worried about this. On one hand, provided that AI robots can handle human work, I will be jobless after graduation. On the other hand, in case, we completely lose the control of artificial intelligence, what will the future of us human be like? By then, "to be or not to be" will be a problem that all human beings have to think about seriously.

After reading Watson's text, an interesting idea came into my mind. It seems to me that the generation of artificial intelligence can be regarded as

a kind of "genetic progress". AI robots "inherit" almost all the characters from human beings, such as appearance, language habits and ways of logical thinking. Nevertheless, in this kind of process, the probability is not so powerful as in biological inheritance. It can even be said that every "gene" of the perfect offspring is determined in advance. Scientists have managed to make superior "genes" concentrated. Take the world-famous AI robot Sophia as an example, she is endowed with a fascinating face imitating Audrey Hepburn, an extremely smart "brain" which is capable to record and analyze huge volumes of data, and a strong language system which helps her give quick responses to various questions (Rubik and Jabs 153–162). Sophia is "good in birth", according to Galton, she might be a typical example of eugenics. The "perfectness" and "human-analogy" of the AI robots like Sophia, from where I stand, might be the major reasons why artificial intelligence has the possibility of replacing humans. Ironically, in the nineteenth century, people in the US feared that bad genes would destroy human society. Two centuries later, good "genes" of AI robots have revived universal fears of being destroyed and replaced. A classic example of "replacement" is IBM Watson[1]. Just like what is written in science fictions, IBM Watson can finish reading 3469 medical monographs, 248000 papers, 61540 test data and 106000 clinical reports in only 17 seconds. Moreover, IBM Watson is able to analyze unstructured data, find a variety of solutions and choose the best one to implement (High). In 2016, it successfully diagnosed a 60-year-old Japanese woman with a rare type of myeloid leukemia (Otake). After knowing IBM Watson, I can't help but pray for my friends studying medicine. Think about the achievements of

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1   It has nothing to do with the biologist Watson. Coincidentally, the name comes from Thomas J. Watson, founder of IBM company.

artificial intelligence in other fields including technology, education, and finance, I am also confused about my future.

Nonetheless, is it necessary that the capabilities mentioned above make it possible for artificial intelligence to replace human beings? If I were lucky enough to ask Kandel, I might see the old man with sparse gray hair smiling and shaking his head. Subjectivity, as Kandel indicated in his text, was very difficult to study. Even if experiments can be conducted based on the biological nature of unity to find out how the neural circuit causes subjective experience, modeling the complete neural activity of subjective consciousness still seems to be a "mission impossible". Recall the previous analogy, in the "genetic process" of artificial intelligence, if we want an AI robot to have the ability to think subjectively, at least, we need to write a piece of code (similar to the genetic code) to enable him. However, for the fact that our knowledge of subjectivity is limited, I don't think scientists can write such code now. As long as AI robots have no subjective awareness, we don't have to worry too much about being replaced. It can be seen clearly when it comes to art field. In 2016, Google claimed that their AI robot can create beautiful poems after being fed with 11,000 unpublished books (Burgess). Nevertheless, read the "poems" written by the robot carefully, we may find that they are more like products of a word game than poems: "I was to buy any groceries. Horses are to buy any groceries. Horses are to buy any animal." (Burgess) As the Chinese poet Yu Jian pointed out in 《新京報》, the "poems" written by AI robots are merely combinations of "fragments of words", without spirituality and personal feelings (杜若). In my opinion, it can be seen as a consequence of lack of subjective consciousness. Because, as shown in Kandel's text, after seeing objective things, people's emotions and feelings come from subjective consciousness.

The creation of works of art such as poetry is not only based on literary reserves but also requires profound sentiments. Look back at IBM Watson which I mentioned earlier, can it really be a substitute for a human doctor? Imagine this scenario: an AI "doctor" without subjective feelings diagnosed a patient with serious illness and had only a few months to live. When the "doctor" tells the patient the truth without any disguise, I don't think the patient will be grateful to the development of AI technology. Relieved for my friends who study medicine, their white lies allow them to withstand the test of artificial intelligence. Given that the development of modern science often surprises us, we cannot rule out the possibility that scientists may manage to replicate the neural mechanism of subjective consciousness. But by that time, whether to "inherit" subjective consciousness to artificial intelligence still depends on us human.

However, people still worry about this problem: what if AI robots studied the code of subjective consciousness independently and applied to themselves, even if human scientists do not "give" AI robot subjectivity? Or, more frightening, what if AI robots programmed autonomously to destroy us human? The experiment done by Libet might be reassuring. Just by observing the electrical activities of the human brain, we can anticipate what a person will do before he actually feels that he "has made a decision" (Kandel). No matter how complex the "brain" of artificial intelligence is, in any case, it is still mechanized. Inspired by Libet's experiment, as a non-professional, I think the following solution might be feasible. We can design a sample AI robot, observe and record its neural activity every time before it starts programming and applying the results to itself. After analyzing the data, we may be able to program a monitoring system and install it into advanced AI robots. In this way, when AI robots "decide" to

code on their own, reminders will be conveyed to specialists' computers, thereby ensuring the safety of human beings. Again, think about this problem from the "heredity" perspective, the genetic source of artificial intelligence is humankind. We have no reason to believe that AI robots with human "genes" will plan to replace or even destroy us. However, we also have no reason to believe that they will not.

Does artificial intelligence have the possibility of replacing humans? No one can give a definite answer. Summing up my previous analysis, artificial intelligence might be superior to humans in many data related attributes, but in terms of subjective consciousness, human beings are still irreplaceable. Someone may put that artificial intelligence is still developing and has not yet reached its peak. If it continues to develop, human beings will have great risks to be replaced. But, don't forget that human intelligence is also developing rapidly and not necessarily slower than the development of artificial intelligence. Artificial intelligence itself can be seen as a good example to illustrate this point. Notwithstanding the fact that no one knows whether artificial intelligence in the future will be capable of taking the place of today's humans, it seems to me that two extremely intelligent species must have the wisdom to find a way to live in harmony. In addition, no matter what the future actually is, it is never wrong to face the new world of artificial intelligence bravely with cool nerves and open minds.

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Teacher's comment:

In a well-researched essay, Feng grapples with an imminent challenge—Artificial Intelligence and its implications on the meaning of humanity. She addresses the selected topics from multiple perspectives, and confronts the problem by generating complex and meaningful questions, seeking to make informed judgment that is free from bias. Feng tackles the even harder problem of uncertainty with prudence as much as curiosity, motivating readers to do the same—to own the future by reflecting on our relation to it. In this light, her work demonstrates the productive encounter between human understanding of nature informed by modern science and human understanding of ourselves in an ever-changing world. (Yeung Yang)