

Intelligence and Consciousness

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Many believe that human beings become rulers of life on earth (Arabic: *khalifatul fil-ardh*) solely because of their superior intelligence compared to other species. Based on this belief, many are also worried that if the artificial intelligence (AI) is smarter than most human beings, it will take over their position as rulers of life on earth. According to a former senior scientist at *Google*, **Ray Kurzweil**, it will not be long before AI becomes smarter than most human beings because of its ability to learn deeply (*deep learning*) very quickly. In his book "*Singularity is Nearer*" [2024], **Kurzweil** introduces the "*singularity point*", which is the moment when AI's intelligence has equaled human natural intelligence, or even exceeded it. According to him, this singularity point is getting closer and cannot be avoided. So is it going to be a takeover of the position as rulers of life on earth by AI? **Kurzweil** reminds us that in addition to intelligence, human beings also have something called consciousness, which is not possessed by even the most sophisticated AI. Other living creatures besides human beings, namely animals and plants, even the "simple" ones such as single-celled animals (or plants), are also known to have a combination of intelligence and consciousness. This consciousness is also discussed by historian **Yuval Noah Harari** in his book "*Nexus*" [2024]. In his previous books, **Harari** wrote about the possibility of a new species called "*homo deus*" formed by a combination of an AI and a natural consciousness that until now has not been fully understood by science, let alone artificially created even using the most sophisticated technology. **Harari** theorized that AI alone could not possibly take over the position of human being as the ruler on earth. But if AI were interconnected with the natural consciousness possessed by human beings, animals or plants, then a new species would possibly be created, *homo deus*. This new creature – if it ever appears – would have the potential to take over the position as the ruler on earth.

Consciousness is different from intelligence, but they influence and drive each other. Intelligence is related to cognitive aspects, such as memory systems and problem solving, while consciousness is related to non-cognitive aspects, such as feelings (emotions) and spiritual awareness. Generally, intelligence refers to the ability to process information, the ability to learn, solve problems, and then make plans and make decisions. Consciousness refers to the ability to develop self-recognition, to be aware of the surrounding environment – both natural and social environment - and

the ability to integrate information with subjective experiences in the form of emotional and sensational experiences. Intelligence can be measured using standard psychological tests - the results are called IQ (*Intelligence Quotient*) - through assessment of verbal, logic and spatial abilities. The only consciousness that can be measured is the physical consciousness, which is monitored by measuring the brain electrical activity. The measurement is called the EEG (*electro-encephalography*), which does not measure the actual consciousness, let alone overall consciousness.

It is known that the survival of living things on earth depends on 5 (five) factors, namely intelligence, consciousness, instinct or conscience, various environmental (natural and social) factors, and genetic factors inherited from one generation to the next. If AI only has very high intelligence, then its chance to survive on earth is still very small compared to even a simple microorganism such as a virus, because it does not have the other four factors. Consequently, AI will never be able to take over the position as the ruler of life, as long as there is no physical interconnection between AI and living things. Science and technology must be able to block the physical interconnection between AI and the natural consciousness of living things, in order to prevent it to develop itself into a (likely horrible) new creature.

In addition, the next generation of humanity must be fostered and educated to have high consciousness, not only educated to increase their intelligence, which no matter how high, will still be defeated by AI, sooner or later. What education system that raises consciousness will look like? In facing the application of AI in various aspects of life, this is the question that must be addressed and answered, if we want to prepare the next generation to be resilient in dealing with the development of AI. An education system that builds consciousness must be able to improve self-recognition skills, the ability to be aware of the surrounding environment - both the natural and the social environment - and the ability to integrate information cognitively obtained and subjective experiences in the form of emotional and sensational experiences.