

<http://somatosphere.net/2016/04/mind-consciousness-and-artificial-intelligence.html>

## Mind, Consciousness, and Artificial Intelligence

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This month's web roundup comes through a bit late – paradoxically- due to technical difficulties (my computer died!). Although I will be able to recover most of my files, the past days were a reminder of just how much we depend on technology to go about our lives, including saving our work, our thoughts and ideas... which leads me directly to the topic I had chosen for this post – Artificial intelligence and the human mind.

One of the most fundamental tenets held by social scientists studying the mind is that human cognition is grounded in biological, social, and cultural processes. It is the intertwining of these *necessary* levels that explains the complexity, design, and richness of the human mind. Right? Earlier this month, I attended a fascinating [talk](#) about human utopias, science fiction, and virtual reality, where the speakers asked whether we can ever free consciousness from our bodies. Drawing from ideas about virtual reality and the outstanding improvement in artificial intelligence (AI) technology, the audience was left thinking: Is all consciousness necessarily biological and social? I learned that, in science fiction, there are generally two ways in which the mind is freed from the body. One way is jacking-in, meaning that you plug yourself to virtual reality. Notice that when you do that, you are still in your body, the thinking is still happening in your brain. Another way is the “uploading” – this is about having your brain copied onto a computer. In this case, you live on in the cloud and your body is completely discarded. While we don't have the technology to jack-in, let alone to “upload” anyone, one can imagine this being possible at some point in the future. For me, the mere possibility is indeed an invitation to think through our very definition of mind, and consciousness. Could an uploaded mind still be considered a mind?

The answer to this question depends on how we define mind and consciousness. The field of cognitive science emphasizes cognition and more specifically, how information is represented, processed, and transformed to study mind and consciousness. The brain-as-a-computer

metaphor is so deeply ingrained in this approach that it is sometimes taken quite literally. This eases the difficulties of transposing the concept of mind to the field of artificial intelligence. From this perspective, we can perfectly say that AI is looking more and more like the human mind. Earlier this month, websites were filled with the news of a computer program designed by Google's DeepMind project and how it [beat one of the best Go-players in the world](#) (More coverage can be found [here](#) and [here](#)). The news triggered a discussion about the exponential improvements we are seeing in the AI's capacity to think and learn in ways approaching those of people. Will AI machines ever outsmart us? Some people argue that the question is not whether this will happen or not, but when this will happen. For now, it is clear that when it comes to information processing (especially big amounts of information) AI has the lead over human beings.

Now, the answer to the question about AI being a form of mind is a straightforward "NO" if we assume that mind and consciousness comprise more than information processing. The obvious argument is that consciousness is about being aware of the internal and external world, about the capacity to feel and experience the world in a subjective manner. But the thing here is that asking if AI is a type of mind or whether it can be considered a type of consciousness picks up on a number of issues we have not yet resolved, starting with a clear understanding of what consciousness (or even a simple thought!) really is and how it comes to be. The argument against AI being a form of mind maintains that AI will never be like our intelligence. For one thing, ["a strict symbol-processing machine can never be a symbol-understanding machine"](#). Further, while machines are digital simulations of physiological processes, we should not forget that simulation does not equal duplication (just a side thought here – does "non-human-like" mind *necessarily* mean "not a mind"?). People on the other side of the argument assert that AI is advancing at an astonishing speed, and point to robots that can express and react to emotions, interact with human beings, and even exhibit what could be considered [a very basic type of self-awareness](#) and a [rudimentary sense of humor](#).

Regardless of what each one of us think about the question of AI and its capacity to resemble human intelligence, the truth is that AI is bound to have an ever increasing influence in how we live our lives. Researchers in the area of AI aim to have it assist humans in advanced fields such as healthcare, education, or transportation. While this opens up a myriad of exciting opportunities, the involvement of AI technologies in areas

previously restricted to conscious human decision making has profound ethical implications that need to be addressed. For example, AI can be used to help influence the prioritization and allocation of core hospital tasks, indeed there is [an ongoing project that does just that](#). AI could also be used to shape the “interpersonal” level, as shown in [this piece](#) about a child with autism who finds in Siri a companion and an ally that can help him deal with his relational challenges. Can we imagine AI powering therapies for people with social or relational disabilities? Without going that far, can we imagine intelligent robots accompanying or aiding therapeutic processes outside the clinician’s office? What would the implications of this be? Another hot spot is transportation, where the use of AI is expanding rapidly. It is certainly compelling to imagine self-driving cars and the potential benefits in terms of road safety. Intelligent cars can avoid all too frequent human errors, saving lives. Yet, self-driving cars will eventually be involved in traffic accidents. Whom should a car protect given a dangerous situation? A pedestrian? A passenger? A child or an adult? Clearly, we humans still struggle with these decisions, you just ask researchers working with the trolley problem. Yet, introducing AI means that some sort of answer needs to be built into the algorithm that “makes” the decision on the spot.

The quest for AI is a reminder of [how far we have come](#) and yet how much more we need to know. Indeed, the relevance of the question of how to come to grips with the messy real world goes beyond the field of AI. So maybe this is not a question about who is smarter, humans or AI machines. When thinking about the social world, it is undeniable that AI can process and learn from amounts of data that are unthinkable for human beings, but the problems faced in society involve a mix of data, circumstances, and human behavior shaped by meaning making processes. The development of more advanced forms of AI offers possibilities that we can only start to imagine. It also confronts us with core questions about our own minds, how the brain works, what we take consciousness to be, and how we understand our minds to shape and be shaped by the social world. It seems to me that the future is filled with opportunities to expand our horizons with the help of AI.

A little humor about robots from around the web – Enjoy!

- [Artificial Intelligence steals money from banking customers](#)
- [The robot gets bullied](#)

**AMA citation**

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