**It is still necessary to distinguish between the digital world and the physical world**

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What is reality? How do we know that our perception of the world is not an illusion and that we are not in a dream at this moment? In 2022, the publication of "Reality+" by David Chalmers, a professor of philosophy and neuroscience at New York University, once again sparked a heated discussion about what reality is. In this book, Chalmers asserts: "Virtual reality is real reality. At least it can be said that virtual reality is real as a whole. The virtual world is not necessarily a secondary real world, it may also be an original world." Regarding whether virtual reality is real reality, Karina Vold, an associate professor at the Institute of History and Philosophy of Technology at the University of Toronto, Canada, said in an exclusive interview with our reporter that Chalmers's view is too optimistic and it is still necessary to distinguish between the digital world and the physical world. She also analyzed the ethical issues brought about by artificial intelligence and gave her own predictions on the development prospects of the philosophy of technology.

**Philosophical discussions about the nature of reality have a long history**

　　China Social Sciences Today: From the perspective of philosophical tradition, when did the discussion about reality and its definition begin?

　　Wald: Discussions about the nature of reality have a long history in philosophy. In the Eastern tradition, these discussions can be traced back at least to the time of Zhuangzi, whose "Dream of the Butterfly" parable tells of a man who dreamed that he was a butterfly and woke up and couldn't figure out whether he was Zhuangzi or the butterfly. Was he the butterfly in his dream, or was the butterfly Zhuangzi in his dream? The story of Zhuangzi dreaming of the butterfly tells us that people have been reflecting on their identity and existence since ancient times. This parable raises the question: Are we really experiencing what we think is reality, or are we dreaming? There are similar philosophical stories in ancient India. For example, the story of Vishnu coming down and transforming people into new situations. In Western philosophy, we can trace questions about the nature of reality back to the ancient Greeks. In ancient Greek philosophy, for example, Plato's allegory of the cave raises the question of whether we are really living in reality.

　　China Social Sciences Today: Both Chinese and Western philosophical traditions have discussed the nature of reality. In your opinion, can humans truly understand the nature of reality, or will we never get the answer due to the limitations of our perception and cognitive framework?

　　Wald: We humans are limited in what we can learn about the nature of reality. We are limited by our external perception, which is how we get information about the outside world, so I think the discussion about reality will continue. But it doesn't mean that we can't get any knowledge about the outside world at all, but it does mean that the way we can understand what reality is and what we can understand are limited.

**“Virtual Reality” Challenges Common Sense**

　　China Social Sciences Today: At present, most people believe that virtual spaces such as the Internet world, the game world, and the metaverse are less "real" than the physical world and are a second-level reality, but David Chalmers believes that the Internet world is also real. What do you think about this? Why should we challenge common sense?

　　Wald: In his book Reality Plus, Chalmers presents a view he calls “Virtual Realism,” which holds that virtual reality is real reality. In defending this view, he challenges the common-sense view that virtual reality is fake or imaginary, involves hallucinations, or that entities in virtual reality are not real. In Chalmers’ view, what happens in virtual reality is real, and entities in virtual reality are—or at least can be—real objects that actually exist. On this basis, Chalmers proposes that reality can be in at least five different senses (the five criteria for the real world are: existence, causal power, mind independence, non-illusory, and authenticity), and that virtual objects can be real in four of these five senses.

　　I personally think it’s very important to maintain the distinction between physical and digital objects, something Chalmers still acknowledges but perhaps doesn’t emphasize enough.

　　The role of common sense in philosophy is complex. On the one hand, common sense guides our philosophical intuitions, is data and evidence, and deviations from common sense can be seen as signs that mistakes are about to be made. On the other hand, common sense is incompatible or wrong in some important details, which can only be clarified through scientific or philosophical investigation. Therefore, philosophers must respond to common sense and be responsible for it, but cannot be bound by it. Emerging technologies such as virtual reality and artificial intelligence are particularly useful for philosophers because they bring new possibilities about the world, reality, and the human condition. Therefore, reflecting on new technologies or technologies that may appear in the future is valuable for scholars who are concerned with various areas in philosophy.

　　I have co-authored a new paper reflecting on the ethical implications of neurotechnology. In it, we discuss rapidly developing technologies such as smart prosthetics (also known as neuroprosthetics) and brain-computer interfaces. These technologies, once the stuff of science fiction movies, are now becoming a reality. As they interact more with neurotechnology, users report that the tools become part of their selves and their minds. We argue that the extended cognition hypothesis, an increasingly popular philosophical view of the mind, can explain this intuition because, according to it, artifacts can become part of the user’s mind. However, there are also examples where users suddenly lose access to their cognitive tools, demonstrating the fragility and instability of the technologies involved. These cases seem to challenge the idea that users can have the right kind of relationship with their tools that meets the equivalence criteria that traditionally underpin extended cognition theory. In particular, these technologies seem to violate an ownership condition, namely that we in some sense “own” our thoughts and their contents, a condition that has been repeatedly asserted in the extended cognition literature published over the past 20 years. In addition to arguing that smart prosthetics can become part of a person’s extended cognition system (despite the obvious challenges to the ownership condition), we will use these new technologies to reassess the status of the ownership criteria. We believe that the introduction of a new concept of co-ownership is necessary and more appropriate in explaining the functioning of advanced cognitive technologies.

**Pay attention to the ethical issues of the virtual world**

　　Social Sciences in China News: What are the philosophical implications of spending a lot of time in virtual reality? How should we deal with the problem that virtual reality may be used as a tool to escape real-life problems?

　　Wald: For individuals and society, spending more and more time in VR could have important ethical, cognitive, and social consequences. This could lead to various cognitive or moral declines, such as a lack of social skills and empathy, and could also undermine social cohesion, such as a lack of a sense of belonging to a community. However, VR could also have positive effects in these areas, and much will depend on the nature of the VR—is it a well-designed world that conveys the right values ​​and promotes online social interaction, or is it an isolated, hyper-personalized experience that traps users in their own “private bubble”? We still need the physical world to survive (unless we live in some kind of simulation), and we need healthy and safe physical environments and physical interactions with each other. From a technological perspective, we are still far from a situation where we spend most of our time in VR. In the meantime, we can still shape the technologies that will build virtual worlds through governance, regulation, and other efforts to promote responsible design.

　　China Social Sciences Today: Is it possible for us to have enough computing power and electricity to create a virtual world as colorful as the current physical world? Even if full virtual reality is possible, should we risk creating it?

　　Wald: That’s a good question. It seems to me that Chalmers is very optimistic about the future power and accuracy of analog technology. In Reality+, he writes: “There is a view that digital computers can never fully simulate the physical laws of the continuum, which involves exact quantization of the continuum. This view is debatable. Digital analog technology should be able to approximate the known laws of physics to a certain degree of accuracy. And, at least in theory, it is possible that analog computers that process continuous values ​​(perhaps analog quantum computers) can fully simulate the known laws.” Later in the book, Chalmers cites Moore’s Law as evidence that technology will continue to advance rapidly. Moore’s Law is not really a law, but an empirical observation by Gordon Moore, one of the founders of Ingels, that the number of transistors on a single chip doubles approximately every two years, which reduces the cost of the chip. But Moore’s Law is not a law of nature, it is a fragile assumption about the future development of computing power. In fact, many people, including Moore himself, have pointed out that this progress cannot continue forever and there are physical limits, especially when transistors approach the size of atoms. By then, technological progress will rely on a shift to new chip architectures, such as quantum computing.

　　Whether we should create fully virtual reality simulations and related normative issues have sparked widespread concern among scholars in the fields of moral and political philosophy. What would happen if everyone could create an entire universe through their personal computer? In the universes they create, do these human creators become god-like characters? Should there be restrictions on the types of worlds that individuals can create? Some philosophers worry that creating moral AI avatars, virtual characters that have their own interests and can feel harm, pain, or suffering, could lead to some terrible scenarios in which these AIs might experience catastrophic experiences.

　　Likewise, in a fully simulated VR world, we must assume that the beings in it are conscious, because it is a full simulation of our world, and beings in our world do have consciousness, so by assumption, the full simulation will include conscious beings. If these fully simulated VR worlds are not wonderful places, then the beings in them may live in extreme pain, and their creators may not try to alleviate this pain due to ignorance or indifference. In short, a full VR simulation of our world would have terrible consequences and would be a dangerous project to build. But perhaps fortunately, I don't think we have enough computing power to make it happen.

**Philosophy of technology plays an important role**

　　China Social Sciences Today: What do you think about the role of interdisciplinary research in advancing our understanding of human nature?

　　Wald: I think that there are many interesting and important problems that we face today, and given their complexity, they must be studied using an interdisciplinary approach. For example, when we think about what is the value of human life, one of the common views is that consciousness is crucial. In this case, consciousness refers to phenomenal consciousness, that is, the ability to feel, experience, and have life experiences. But what is consciousness? How do we measure it? How do we detect it? Can we build it? All of these questions require interdisciplinary knowledge to explain, including neuroscience, computer science, psychology, cognitive science, etc., and the comprehensive use of knowledge from these disciplines can really explain the relevant problems.

　　China Social Sciences Today: In the era of artificial intelligence, what role do you think philosophy of technology plays?

　　Wald: Chalmers coined the term “philosophy of technology,” a new field of philosophy that both asks philosophical questions about technology, traditionally called philosophy of technology, and uses technology to answer traditional philosophical questions. The role of philosophy of technology has been crucial in this AI “spring” that we have been enjoying for nearly a decade. We have seen a resurgence of many traditional philosophical questions about new machine learning technologies, such as, what are the boundaries of machine intelligence? Can machines think? Can they create? Can they be conscious? And so on. We have also observed the use of AI to address philosophical and ethical questions. For example, using AI to improve fairness in the medical field or to resolve philosophical paradoxes and dilemmas. These are undoubtedly evidence of the important role of philosophy of technology in today’s society.