Yuk Hui and Brian Kuan Wood

A Conversation on *Art and Cosmotechnics*, Part 1

Paul Manship's 1934 sculpture *Prometheus* bringing fire stolen from the gods to figure skaters at Rockefeller Center in Manhattan, New York City, 2008. License: CC BY-SA 4.0.

Brian Kuan Wood: Let's start with a bit of background before we go into your new book, *Art and Cosmotechnics* – because the book, in turning its focus to art and aesthetics, builds upon some concepts that you've previously elaborated as a philosopher. The most obvious of these concepts – which is also in the title – was the focus of your 2016 book *The Question Concerning Technology in China*: *An Essay in Cosmotechnics.* Let's begin by situating ourselves around the meaning of "cosmotechnics," also to clarify it against certain misunderstandings that may have arisen in the time since you wrote *The Question Concerning Technology*, since even the most necessary critiques of Western-dominated political or technological paradigms can become vulnerable to reactionary tendencies or wrongful appropriations.

Yuk Hui: I have to say that *Art and Cosmotechnics* is quite a strange book, because it deals with three different kinds of logic that, at first glance, don't seem related at all: tragic thought, Daoist thought, and cybernetic thought. I don't think there has been any work trying to reassociate these three. *Art and Cosmotechnics* is divided into three parts, and I should explain why it's structured this way. But first, let me respond to your question by explaining why I had to coin this concept of cosmotechnics before I go into what it really is, and the difficulty of elaborating such concepts. It's something quite personal in my studies of philosophy – I first studied computer science before moving on to study philosophy for many years, with a focus on the question of technology. And after some ten years, I found that all I have studied is supposed

to be universal. But, at the same time, the philosophy of technology I was studying was actually very European, and maybe a bit American. So, at a certain moment, I asked myself: What does it mean to talk about technology in cultures outside of Europe? We know that there must be technology outside of Europe. It would be a *betîse* to deny this.

We know that, according to historians, Greek technology came from the Near East and then stayed in Europe through the Greco-Roman period until technology became an object of hate during Christianity, until the Renaissance and later on. And then there was a huge change on the continent when European modernity began to emerge. Going any further into these origins would involve a lot of discussion with classicists and historians, but the main point is that I was quite amazed by the lack of understanding of the concept of technology itself, because the whole discourse is very much structured around European history and European philosophy. I'm not saying this is bad, since the discourse does offer some important insights. But it made me very curious about how we could articulate the question of technology outside of Europe. But then we immediately encounter a huge obstacle, because we've been told since a young age that science and technology are universal, like mathematics. In a way, we have already accepted the idea that technology is universal, science is universal, logic is universal, mathematics is universal, and so forth. Even in academic disciplines, there seems to be a lack of reflection on what this universality is and what it implies.

Let me give a few examples. In the philosophy of technology – especially in analytic philosophy – all claims tend to be universal. In continental philosophy of technology, for example, Heidegger has been an influential figure. Heidegger's 1949 talk in Bremen (later published in 1953 as *The Question Concerning Technology*) basically suggests that if you want to understand what technology is, or what he called the essence of technology, then we can understand it in two parts. One part is what the Greeks called *technē*, which Heidegger associated with *poiesis*, with bringing something forth (*hervorbringen* in German). And this poetic realization is the un-concealment of Being. And so the question of Being enters his discourse as something closely related to the concept of technology, but also to the concept of art, which he wrote about around 1935 and 1936 in "The Origin of the Work of Art." The second part Heidegger tries to show is that modern technology – which, for him, came after the Scientific Revolution and actualized itself at the end of the eighteenth and beginning of the nineteenth century – no longer shares the same essence as *technē*, or *poiesis*, but has rather become what he called "enframing" – *Gestell*, meaning that everything could be treated as what he called a "standing reserve," *Bestand*, a resource to be ordered and exploited, from rivers to atoms.

Heidegger's discourse on the difference between Greek *technē* and modern technology was not only widely accepted in continental Europe, but also in East Asia – at least in Japan, China, and Korea. Among the non-European cultures, insofar as I understand, Heidegger's thesis was widely accepted for seeming to mirror the tension between tradition and modernity. The Chinese or the Japanese, for example, could associate Greek *technē* with their own tradition, and modern technology with modernization or Westernization. So you can immediately see the conflict. But there is also a blind spot concerning the essence of technology that Heidegger posited. For example, does the un-concealment of Being in Greek *technē* allow anything to be found in Eastern philosophy, for instance in China and in Japan, where the question of Being was, as the founder of the Kyoto School, Kitaro Nishida, famously claimed, not the core question? In Western Europe, we know that it has been considered the first philosophy.

Though Heidegger's thesis has been widely adopted, this blind spot remains. People tend to equate Greek *technē* with Chinese, Japanese, or Indian technology without really looking into the meaning of technology that was already present in Heidegger's discourse, but also in the history of technology. For example, the great sinologist Joseph Needham, who published more than twenty volumes of *Science and Civilisation in China*, tried to show that China's science and technology were quite advanced before the sixteenth century. And his haunting question was: Why didn't modern science and technology happen in China or in India, but only in Europe?

Some historians have tried to show, following Needham, that, for example, a certain technology – say, papermaking in the second century in China – was more advanced than in Europe. Their method compares one technology with similar technologies in other regions without considering what Needham himself warned, which was that all these technologies, even if they involve similar materials and similar products, are actually based on different epistemological and ontological assumptions. Even when technologies can be put under the same category, there are still tremendous

differences between them. Yet by simply comparing which one is more advanced than the other, we universalize technology by default. We assume that there is only one way of understanding technology.

In the anthropology of technology, we know that technology has been understood as essential to the process of harmonization – the externalization of memory, the liberation of organs, and so forth – but this is only a universal dimension of technology. So I introduced what I called the antinomy of the universality of technology, with the antithesis that, where technology is not universal, it is conditioned – motivated and constrained – by a certain cosmology, i.e., its locality. This is the antinomy I put forward, in the sense that, in an antinomy, when each thesis is separated and looked upon individually, they are all correct. But when you bring them together, you see a contradiction. But this contradiction leads to what I call cosmotechnics, where all technologies are actually cosmologically constrained and motivated. Cosmology here is not merely theoretical, but always embedded and embodied in the invention, development, and use of technologies. That's what I argued in *The Question Concerning Technology in China*. You can already see from the title that it responds to Heidegger's 1949 lecture, *The Question Concerning Technology.* In other words, I tried to reinterpret the concept of technology by coining a different concept, cosmotechnics, in order to call for a new interpretation of technology by situating it historically, cosmologically, and locally. As for your question on reactionary, or neo-reactionary, politics, it's an important one that we'll come back to later.

BKW: I wonder if we could also clarify here our interest in cybernetics. Your following book, *Recursivity and Contingency* (2019), dealt with the significance of cybernetics as a world-historical, political, and philosophical rupture in Western thinking. This goes back to the physics of information, as Norbert Wiener defined it in the 1940s, where feedback, circularity, and recursion, as you explain, dissolve a certain separation in Western thinking between organic life and machinic systems. You eloquently described this in the book as a situation where machines are "no longer simply tools or instruments, but rather the gigantic organisms in which we live." So this act of enframing also shifts into a kind of cybernetic body that is both organic and machinic. Could you describe further the conditions of this merger, and perhaps also the cosmic or cosmological implications of living inside such gigantic organic machines?

YH: Here I can simply continue from where I left off. After I finished *The Question Concerning Technology in China,* I felt that something was still incomplete. I was still haunted by Joseph Needham. I thought that, though I responded to his question, my 2016 book had missed something significant. And there was an urgency for me to work on that. In the twentieth century, if you asked a sinologist or even a Chinese philosopher about the difference between Chinese thought and European or Western thought, or about the difference between Chinese technology and Western technology, you would often hear that Chinese thought is organic, while Western thought is machinic. To some extent, Joseph Needham is responsible for this really problematic answer, because he tries to say this in his books. For Needham, it was only from Leibniz onward that Western philosophy became organic.

In the second volume of *Science and Civilisation in China*, Needham started with Leibniz and named Spinoza, Kant, Hegel, Schelling, and Fichte, down to Whitehead and Norbert Wiener, as thinkers of an organicism. Of course, some of his contemporaries like Haldane, Smut, Morgan, and so forth also associated with holism and organicism. Needham claimed that, while Western philosophy only became organic after Leibniz, Chinese philosophy has been organic since the very beginning, and never passed from mechanism to organism like in the West. Needham continued by saying that maybe Leibniz was influenced by his correspondence with a Jesuit in China, Father Bouvet, who told Leibniz about the neo-Confucian Zhu Xi, one of the most important neo-Confucians of the twelfth century. This way of formulating the difference between Chinese thought and Western thought is problematic in many senses. First, it can reintroduce an orientalist viewpoint, and secondly, it may not help us to qualify what Chinese thought or Chinese technology actually is. And there is an urgency to understand how to articulate Chinese science and technology without recourse to organicism or holism. This is the problem we face today, especially when characterizing Chinese medicine as holism, when holism is actually a German invention, as shown by Volker Scheid, a historian and practitioner of traditional Chinese medicine.

This is why I wanted to work on the concept of the organic and show it as fundamental for Western modernity. It's probably more fundamental for the West than for China, because mechanism and organism were never a central themes in China. The Chinese were never

aware of them, just as they were never aware of tragedy in the Greek sense. Even today, we think of a tragedy as mainly a sad story, but that's not what Greek tragedy is. In this sense, *Recursivity and Contingency* was partly a continuation of *The Question Concerning Technology in China*. In the preface to *Recursivity and Contingency*, I wrote that the book could have been called *The Specter of Joseph Needham*. I used this study to reconstruct the history of modern Western philosophy, because I believe that the dichotomy or opposition between mechanism and organism was one of the most significant philosophical developments in the eighteenth century in Europe.

We know that modern European thought – what we call early modernity, associated with thinkers like Descartes and others – was very much dominated by mechanistic thinking. Descartes was able to compare the human body with a church organ by articulating how wind related to breath, how the organ's pump related to the heart, and so forth. And this mechanism was very much challenged in the eighteenth century, with the rise of the concept of organism. Let's not forget that until this moment, biology was not yet a scientific discipline, and wouldn't become one until the beginning of the nineteenth century. But the rise of the concept of organism was significant enough that we can find it in the work of Spinoza, Kant, and already in Leibniz of course, as well as in the seventeenth century with the Cambridge Platonists. In *Recursivity and Contingency*, my claim was that Kant's *Critique of Judgment* (1790) played a very significant role in imposing an organic condition of philosophizing towards the end of eighteenth century, where, for philosophy to exist, it couldn't avoid becoming or being organic. I tried to show how the concept of the organic became a paradigm of thought, from all the Idealists that followed Kant – Fichte, Schelling, Hegel, and so forth – until the twentieth century in Bergson, Whitehead, and of course Joseph Needham, whose turn towards organicism was informed by his training as a biochemist.

To some extent, I feel that it's justified to make the claim that, towards the end of the eighteenth century, Kant imposed an organic condition of philosophizing based on the irreducibility between organism and mechanism. However, in *Recursivity and Contingency*, I tried to show that this situation greatly changed in the twentieth century, especially after the rise of cybernetics. When people talk about cybernetics, they may think naively of control and surveillance, but the basic claim of cybernetics is far more fundamental and important for us today. In the first chapter of Norbert Wiener's 1948 book, titled "Newtonian Time and Bergsonian Time," Wiener claims – to put it simply here – that cybernetics has overcome the dichotomy between mechanism and vitalism. The strawmen of vitalism are, for example, Bergson, J. B. S. Haldane, and Hans Driesch, who propose concepts such as *élan vital* or entelechy to describe a vital force in the organism. Wiener started by opposing vitalism and mechanism using Newton – who, of course, is a mechanist not in the sense of Descartes, but in his approach to linear causality – in order to show that cybernetic machines have overcome the opposition between vitalism and mechanism by being based on nonlinear causality. While still being mechanical, cybernetic machines are able to assimilate the behavior of an organism. Hans Jonas, a student of Heidegger, in his book *The Phenomenon of Life: Toward a Philosophical Biology*, claimed that cybernetics marks the first time since Aristotle that we find a unifying logic, which is to say that cybernetics has basically overcome dualism. Today, were you to criticize cybernetics machines as dualist, it would already be a conceptual mistake.

Since the first half of the twentieth century, our machines have no longer been like those of Descartes's time, no longer like the machines of Karl Marx's time – mechanical machines, characterized by linear causality and repetition. Hans Jonas was very critical of Wiener's cybernetics in *The Phenomenon of Life*, but he never underestimated it, and was sure to point out its philosophical significance. So from cybernetics onward, we see a new paradigm of machines, which I called the becoming-organic of machines. And this becoming-organic of the machine is fundamental to the work of Gilbert Simondon, as we find in his *On the Mode of Existence of Technical Objects*. If we follow this reading, maybe we can say that cybernetics has completed what Kant called the organic condition of philosophizing. This is also how I interpret Heidegger identifying cybernetics as marking the end of Western philosophy and metaphysics. So if, since the end of the eighteenth century, we have not only lived among a new type of machines, but also confronted a new condition of philosophizing after Immanuel Kant (consider the publication of *Critique of Judgment* in 1790), and after Whitehead, after cybernetics, but also after Donna Haraway, then today we have to rearticulate the conditions of philosophizing. For me, this means we cannot simply go back to organic nature or a naive discourse on multispecies relations. *Recursivity and Contingency* was an effort to historically articulate and elaborate on this new condition of

philosophizing. *Art and Cosmotechnics* is a continued pursuit of this spirit.

BKW: In *Art and Cosmotechnics* you outline a new way of thinking about art and aesthetics that follows from this. But your approach runs contrary to many vulgar approaches to art and technology that simply normalize new technological platforms. Often this is done in the name of broadening the limits of art or aesthetics by inserting computers, social media, or NFTs into a traditional artistic setting, and usually without questioning the limits of those platforms. Rather than question their limits, conservative artistic settings seem compelled to celebrate the oppressive or deterministic tendencies of technology, like in the Ballardian scenarios of *Black Mirror*. In *Art and Cosmotechnics*, you advocate for something different, which is a return to certain fundamentals of aesthetics, more specifically by engaging with aesthetics as a form of logic that can be said to precede or even include our current paradigm of technology, since it is actually larger than technology. Could you describe this unusual technique that begins in the book with a turn back to Greek tragedy, or what you term in the book "tragist" logic, and discuss your reasoning for it?

YH: After I finished *Recursivity and Contingency*, again, I was haunted. In the book, I tried to use the two concepts, recursivity and contingency, to characterize this movement of thought from Kant to the twentieth century. After the book was published, Augustin Berque, a specialist on Japan who has worked a lot on landscape and logic in East Asia, emailed me to say that he found the book very interesting, but was astonished that I didn't talk about the profound notions of recursivity and contingency in East Asia. At the same time, many have claimed that cybernetics is very close to Chinese thought, and even that cybernetics actually originated in China (this has never been proven) because Norbert Wiener was a visiting professor at Tsinghua University for a year in the early 1930s. Wiener did make some remarks that Chinese writing was significant for his thinking on cybernetics, though it's not clear what he was referring to. Like the discourse on Chinese holism and organicism, this myth about cybernetics and Chinese thought is quite fascinating but suspicious.

But if I refuse this claim, I have to explain the difference between cybernetics and Chinese thought. If Chinese technology is not cybernetics in the sense of Norbert Wiener, then how can we articulate this? Without this distinction, everything sinks into the dark night where all cows are gray, as Hegel writes in the preface to his *Phenomenology of Spirit*, when he criticized Schelling and Fichte's concept of the absolute. For me, philosophy is all about elaboration, and my task in *Art and Cosmotechnics* was to elaborate different forms of recursive thinking, and show the relations, or possible relations, between these differences.

There is a lot of effort going into merging art and technology today, and there is sure to be more from governments, universities, and the private sector. Art and technology in the past few decades have been really fascinated with live experience – interaction, immersion, and so forth – but many of the works you encounter are actually entertainment, which is not a negative word so much as a matter of fact. This means that the relation between art and technology has yet to be determined, and this relation is where the book sets off from. Much has happened in the past century since Walter Benjamin's *The Work of Art in the Age of Technical Reproducibility*, written in 1935, and Heidegger's "The Origin of the Work of Art" in 1936, both on the relation between art and technology. Benjamin wrote that it is futile to ask whether or not photography and cinema are art, and the past eighty years have shown that Benjamin captured the spirit of the avant-garde and anticipated the revolution that would take place in art. And he wrote that it is more important to think how technology has changed the concept of art. I think this is the major thesis he put forward in *The Work of Art in the Age of Technical Reproducibility.* He made this claim as a good Marxist-materialist, showing that material conditions determine the concept, and not the concept that determines reality. But he also showed that the concept of art has to be enlarged according to a technological condition. Today, photography and cinema are already widely accepted, and also institutionalized in the domain of art.

My approach is almost the opposite. I ask: if, since Walter Benjamin – or even since the avant-garde before Benjamin – we have been trying to ask how technology changes the concept of art, as you find in Duchamp, can we now turn the question around and ask how art can transform technology? I think this is an important question not only in a conceptual sense, but also in a diplomatic one. If you were to talk to an engineer about an art project, how would you talk to them? Do you simply want to import this or that technology to create some kind of a new experience? Or do you want to influence how technology is made, how

technology is conceived, how technology ought to be developed? I think we can also turn the question around further by asking: How can art contribute to the imagination of technological development?

Technology comes with huge opportunities but also huge potential catastrophes. When you look at climate change, the catastrophe is already there; as Heidegger said about *Gestell*, the essence of modern technology is to consider everything as a standing reserve, as a resource to be ordered and exploited. So maybe art and technology need a different relation. We should continue asking how technology can transform the concept of art and philosophy, but at the same time, we also have to ask how art and philosophy can transform the concept of technology, including the imagination, invention, development, and use of technology. I think this is our task, and we shouldn't avoid it. But if we have to go back to art itself, to the question of aesthetics, where do we start?

The study of aesthetics only entered into philosophy with Alexander Baumgarten's first volume of *Aesthetica*, published in 1750. Its first line claims that *Aesthetica* is an investigation into a lower faculty of cognition. Unlike logic, as a higher faculty of cognition dealing with clear and distinct ideas, aesthetics is more suited to subjective tastes, emotions, and feelings. Rationalists like Baumgarten also recognized a certain truth in aesthetics that one cannot refuse. However, as when Leibniz talked about aesthetics, what's there is only a *je ne sais quoi* – the object of the lower faculty of cognition that is aesthetics. We can continue this tradition of aesthetics today by talking about emotions, feelings, and things like that, but in *Art and Cosmotechnics* I've tried to elevate the concept of aesthetics to logic. Basically, this means not only reversing the question of Benjamin, but also reversing the discourse of aesthetics since Baumgarten via Kant.

By doing this, I'm trying to show where in aesthetics we can actually articulate a kind of logical form and establish a transition from aesthetics to logic. I feel that elevating aesthetics to logic may offer a better idea of how different kinds of aesthetic thinking can be articulated, and how they can contribute to the discourse on technology. That's why I started with two kinds of aesthetic thinking, but address them as logic. One is "tragist" thinking or "tragist" logic. The other is Daoist logic or "*shanshui*" logic. But *Art and Cosmotechnics* is a strange book – I don't think anyone would ever compare Greek tragedy with *shanshui* painting! Historians may simply dismiss it. But if you read the book, you can see how *tragist* thinking and *shanshui* logic actually present two forms of recursive thinking, through a set of similar but different assumptions. Daoist thinking and tragist thinking both start with contradiction at the very beginning. But how the contradiction is articulated and later resolved in Greek tragedy is very different from how it is articulated and resolved in *shanshui* painting. This is why I needed to begin by elevating aesthetics to logic. But there were many more reasons for these attempts than I've been able to describe here.

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