

MONO 003

The Question Concerning Technology In China

An Essay in Cosmotechnics

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TIMELINE OF THINKERS, EAST AND WEST, DISCUSSED IN THE BOOK

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TIMELINE

Prehistory

Fu Xi (伏羲)
Nüwa (女媧)
Shennong (神農)
(Yan Di, Lie Shan Xi)

1766–1122 BC: Shang Dynasty

1122–256 BC: Zhou Dynasty

Laozi (老子, –531 BC)
Confucius (孔子, 551–479 BC)
Mozi (墨子, 470–391 BC)
Zhuangzi (莊子, 370–287 BC)
Mencius (孟子, 372–289 BC)
Xunzi (荀子, 313–238 BC)

Solon (640–558 BC)
Thales (624–546 BC)
Anaximander (610–546 BC)
Heraclitus (535–475 BC)
Parmenides (515–450 BC)
Sophocles (497/6–406/5 BC)
Socrates (470/469–399 BC)
Plato (428/427–348/347 BC)
Aristotle (384–322 BC)
Euclid (300 BC)
Archimedes (287–212 BC)
Zeno of Citium (334–262 BC)
Cleanthes (330–230 BC)
Chrysippus of Soli (279–206 BC)

221–207 BC: Qin Dynasty

206 BC–220 CE: Han Dynasty

Liu An (劉安, 179–122 BC)
Dong Zhongshu (董仲舒, 179–104 BC)
Sima Qian (司馬遷, 145–90 BC)
Zheng Xuan (鄭玄, 127–200 CE)

Cicero (106–43 BC)
Seneca (1–65 CE)
Claudius Ptolemy (100–170)
Marcus Aurelius (121–180)

220–589 CE: Six Dynasties

Three Kingdoms (220–265 CE)
Jin Dynasty (265–420 CE)
Northern and Southern Dynasties
(386–589 CE)
Wang Bi (王弼, 226–249)
Guo Xiang (郭象, 252–312)

Pappus of Alexandria (290–350)
Diogenes Laërtius (3rd century)
Augustine (354–430)
Boethius (480–524)

589–618: Sui Dynasty**618–907: Tang Dynasty**

Han Yu (韓愈, 768–824)

Liu Zong Yuan

(柳宗元, 773–819)

Hongren (弘忍, 601–685)

Shenxiu (神秀, 606–706)

Heineung (慧能, 638–713)

907–960: Five Dynasties**960–1270: Song Dynasty***Northern Song (960–1127)**Southern Song (1127–1279)*

Zhou Dunyi (周敦頤, 1017–1073)

Zhang Zai (張載, 1020–1077)

Cheng Hao (程顥, 1032–1085)

Chen Yi (程頤, 1033–1107)

Shao Yung (邵雍, 1011–1077)

Zhu Xi (朱熹, 1130–1200)

Adelard of Bath (1080–1152)

Thomas Aquinas (1225–1274)

1279–1368: Yuan Dynasty**1368–1644: Ming Dynasty**

Wang Yangming

(王陽明, 1472–1529)

Song Yingxing

(宋應星, 1587–1666)

Nicholas of Cusa (1401–1464)

Bartolomeo Zamberti (1473–1543)

Nicolaus Copernicus (1473–1543)

Tycho Brahe (1546–1601)

Francisco Suárez (1548–1617)

Galileo Galilei (1564–1642)

Johannes Kepler (1571–1630)

René Descartes (1596–1650)

1644–1911: Qing Dynasty

Wang Fuzhi (王夫之, 1619–1692)

Dai Zhen (戴震, 1724–1777)

Duan Yucai (段玉裁, 1735–1815)

Zhang Xuecheng (章學誠, 1738–1801)

Gong Zizhen (龔自珍, 1792–1841)

Wei Yuen (魏源, 1795–1856)

Yan Fu (嚴復, 1894–1921)

Kang Youwei (康有為, 1858–1927)

Baruch Spinoza (1632–1677)

Isaac Newton (1642–1727)

Gottfried Wilhelm Leibniz (1646–1716)

Immanuel Kant (1724–1804)

Georg Wilhelm Friedrich Hegel

(1770–1831)

Friedrich Wilhelm Joseph

von Schelling (1775–1854)

Tan Sitong (譚嗣同, 1865–1898)
 Wu Zhihui (吳稚暉, 1865–1953)
 Wang Guo Wei (王國維, 1877–1927)

1912–1949: Republic of China

Chen Duxiu (陳獨秀, 1879–1942)
 Xiong Shili (熊十力, 1885–1968)
 Chang Tungsun (張東蓀, 1886–1973)
 Carsun Chang (張君勱, 1887–1968)
 Ding Wenjiang (丁文江, 1887–1936)
 Hu Shi (胡適, 1891–1962)
 Xu Dishan (許地山, 1893–1941)
 Feng Youlan (馮有蘭, 1895–1990)
 Mou Zongsan (牟宗三, 1909–1995)
 Zhang Dainian (張岱年, 1909–2004)
 Yu Guang Yuan (於光遠, 1915–2013)
 Lao Szekwang (勞思光, 1927–2012)
 Li Zehou (李澤厚, 1930–)
 Yu Yingshih (余英時, 1930–)
 Chen Changshu (陳昌曙, 1932–2011)
 Liu Shuhsien (劉述先, 1934–2016)
 Tu Weiming (杜維明, 1940–)

Friedrich Hölderlin (1770–1842)
 Ernst Christian Kapp
 (1808–1896)
 Friedrich Wilhelm Nietzsche
 (1844–1900)
 Edmund Husserl (1859–1938)
 Henri Bergson (1859–1892)
 Friedrich Dessauer (1881–1963)
 Sigmund Freud (1886–1939)
 Martin Heidegger (1889–1976)
 Herbert Marcuse (1898–1979)
 André Leroi-Gourhan
 (1911–1986)
 Jacques Ellul (1912–1994)
 Jean-Pierre Vernant
 (1914–2007)
 Gilbert Simondon (1924–1989)
 Jean-François Lyotard
 (1924–1998)
 Jürgen Habermas (1929–)
 Jacques Derrida (1930–2004)
 Alain Badiou (1937–)
 Peter Sloterdijk (1947–)
 Bernard Stiegler (1952–)

INTRODUCTION

In 1953 Martin Heidegger delivered his famous lecture 'Die Frage nach der Technik',¹ in which he announced that the essence of modern technology is nothing technological, but rather enframing (*Ge-stell*)—a transformation of the relation between man and the world such that every being is reduced to the status of 'standing-reserve' or 'stock' (*Bestand*), something that can be measured, calculated, and exploited. Heidegger's critique of modern technology opened up a new awareness of technological power, which had already been interrogated by fellow German writers such as Ernst Jünger and Oswald Spengler. Heidegger's writings following 'the turn' (*die Kehre*) in his thought (usually dated around 1930), and this text in particular, portray the shift from *technē* as *poiesis* or *bringing forth* (*Hervorbringen*) to technology as *Gestell*, seen as a necessary consequence of Western metaphysics, and a destiny which demands a new form of thinking: the thinking of the question of the truth of Being.

Heidegger's critique found a receptive audience among Eastern thinkers²—most notably in the teachings of the Kyoto School, as well as in the Daoist critique of technical rationality, which identifies Heidegger's *Gelassenheit* with the classical Daoist concept of *wu wei* or 'non-action'. This receptivity is understandable for several reasons. Firstly, Heidegger's pronouncements regarding the power and dangers of modern technology seemed to have been substantiated by the devastations of war, industrialisation, and mass consumerism,

1. M. Heidegger, 'The Question Concerning Technology', in *The Question Concerning Technology and Other Essays*, tr. W. Lovitt (New York and London: Garland Publishing, 1977), 3–35.

2. In this book, by 'East', I generally mean East Asia (China, Japan, Korea, etc., countries that were influenced by Confucianism, Buddhism, and, to some degree, Daoism).

leading to interpretations of his thought as a kind of existentialist humanism, as in the mid-century writings of Jean-Paul Sartre. Such interpretations resonated deeply with the anxieties and sense of alienation aroused by the rapid industrial and technological transformations in modern China. Secondly, Heidegger's meditations echoed Spengler's claim about the decline of Western civilisation, though in a more profound key—meaning that they could be taken up as a pretext for the affirmation of 'Eastern' values.

Such an affirmation, however, engenders an ambiguous and problematic understanding of the question of technics and technology and—with the arguable exception of postcolonial theories—has prevented the emergence of any truly original thinking on the subject in the East. For it implies a tacit acceptance that there is only one kind of technics and technology,³ in the sense that the latter are deemed to be anthropologically universal, that they have the same functions across cultures, and hence must be explained in the same terms. Heidegger himself was no exception to the tendency to understand both technology and science as 'international', in contrast to thinking which is not 'international', but unique and 'homely'. In the recently published *Black Notebooks*, Heidegger wrote:

The 'sciences', like technology and like the technical schools (*Techniken*), are necessarily international. An international thinking does not exist, only the universal thinking, coming from one source.

3. I make a distinction between the use of the words technics, *technē*, and technology: *technics* refers to the general category of all forms of making and practice; *technē* refers to the Greek conception of it, which Heidegger understands as *poiesis* or bringing forth; and *technology* refers to a radical turn which took place during European modernity, and developed in the direction of ever-increasing automation, leading consequently to what Heidegger calls the *Gestell*.

However, if it is to remain close to the origin, it requires a fateful [*geschicklich*] dwelling in a unique home [*Heimat*] and the unique people [*Volk*], so that it is not the folkish purpose of thinking and the mere 'expression' of people [*des Volkes*]—; the respective only fateful [*geschicklich*] home [*Heimattum*] of the down-to-earthness is the rooting, which alone can enable growth into the universal.⁴

This statement demands further analysis: firstly, the relation between thinking and technics in Heidegger's own thought needs to be elucidated (see §7 and §8, below), and secondly, the problematic of the 'homecoming' of philosophy as a turning against technology needs to be examined. However, it is clear here that Heidegger sees technology as something detachable from its cultural source, already 'international', and which therefore has to be overcome by 'thinking'.

In the same *Black Notebook*, Heidegger commented on technological development in China, anticipating the victory of the Communist Party,⁵ in a remark that seems to hint at the failure to address the question concerning technology in China in the decades that would follow the Party's rise to power:

4. '»Wissenschaften« sind, wie die Technik und als Techniken, notwendig international. Ein internationales Denken gibt es nicht, sondern nur das im Einen Einzigem entspringende universale Denken. Dieses aber ist, um nahe am Ursprung bleiben zu können, notwendig ein geschickliches Wohnen in einer Heimat und einzigem Volk, dergestalt, daß nicht dieses der völkische Zweck des Denkens und dieses nur »Ausdruck« des Volkes—; das jeweilig einzige geschickliche Heimattum der Bodenständigkeit ist die Verwurzelung, die allein das Wachstum in das Universale gewährt.' M. Heidegger, GA 97 *Anmerkungen I–V (Schwarze Hefte 1942–1948)* (Frankfurt Am Main: Vittorio Klostermann, 2015), 59–60, 'Denken und Dichten'.

5. GA 97 was written between 1942 and 1948; the Chinese Communist Party came to power in 1949.

If communism in China should come to rule, then one can assume that only in this way does China become 'free' for technology. What is this process?⁶

What does becoming 'free' for technology mean here, if not to fall prey to an inability to reflect upon it and to transform it? And indeed, a lack of reflection upon the question of technology in the East has prevented the emergence of any genuine critique originating from its own cultures: something truly symptomatic of a detachment between thinking and technology similar to that which Heidegger described during the 1940s in Europe. And yet if China, in addressing this question, relies on Heidegger's fundamentally Occidental analysis of the history of technics, we will reach an impasse—and this, unfortunately, is where we stand today. So what is the question concerning technology for non-European cultures prior to modernization? Is it the same question as that of the West prior to modernization, the question of Greek *technē*? Furthermore, if Heidegger was able to retrieve the question of Being from the *Seinsvergessenheit* of Western metaphysics, and if today Bernard Stiegler can retrieve the question of time from the long *oubli de la technique* in Western philosophy, what might Non-Europeans aspire to? If these questions are not even posed, then Philosophy of Technology in China will continue to be entirely dependent upon the work of German philosophers such as Heidegger, Ernst Kapp, Friedrich Dessauer, Herbert Marcuse, and Jürgen Habermas, American thinkers such as Carl Mitcham, Don Ihde, and Albert

6. 'Wenn der Kommunismus in China an die Herrschaft kommen sollte, steht zu vermuten, daß erst auf diesem Wege China für die Technik »frei« wird. Was liegt in diesem Vorgang?' Ibid., 441.

Borgmann, and French thinkers such as Jacques Ellul, Gilbert Simondon, and Bernard Stiegler. It seems incapable of moving forward—or even backward.

I believe that there is an urgent need to envision and develop a philosophy of technology in China, for both historical and political reasons. China has modernised itself over the past century in order to ‘catch up with the UK and outstrip the US’ (超英趕美, a slogan proposed by Mao Zedong in 1957); now it seems to be at a turning point, its modernisation having reached a level that allows China to situate itself among the great powers. But at the same time, there is a general sentiment that China cannot continue with this blind modernisation. The great acceleration that has taken place in recent decades has also led to various forms of destruction, cultural, environmental, social, and political. We are now, so geologists tell us, living in a new epoch—that of the Anthropocene—which began roughly in the eighteenth century with the Industrial Revolution. Surviving the Anthropocene will demand reflection upon—and transformation of—the practices inherited from the modern, in order to overcome modernity itself. The reconstruction of the question of technology in China outlined here also pertains to this task, aiming to unfold the concept of technics in its plurality, and to act as an antidote to the modernisation programme by reopening a truly global history of the world. The book is an attempt both to respond to Heidegger’s concept of technics, and to sketch out a possible way to construct a properly *Chinese* philosophy of technology.

§1. THE BECOMING OF PROMETHEUS

Is there technological thought in China? At first glance, this is a question that can be easily dismissed, for what culture doesn’t have technics? Certainly, technics has existed in China

for many centuries, if we understand the concept to denote skills for making artificial products. But responding to this question more fully will require a deeper appreciation of what is at stake in the question of technics.

In the evolution of human as *homo faber*, the moment of the liberation of the hands also marks the beginning of systematic and transmissible practices of making. They emerge firstly from the need for survival, to make fire, to hunt, to build dwellings; later, as certain skills are gradually mastered so as to improve living conditions, more sophisticated technics can be developed. As French anthropologist and palaeontologist André Leroi-Gourhan has argued, at the moment of the liberation of the hands, a long history of evolution opened up, by way of the exteriorisation of organs and memory and the interiorisation of prostheses.⁷ Now, within this universal technical tendency, we observe a diversification of artefacts across different cultures. This diversification is caused by cultural specificities, but also reinforces them, in a kind of feedback loop. Leroi-Gourhan calls these specificities 'technical facts'.⁸ While a technical *tendency* is necessary, technical *facts* are accidental: as Leroi-Gourhan writes, they result from the 'encounter of the tendency and thousands of coincidences of the milieu':⁹ while the invention of the wheel is a technical tendency, whether or not wheels will have spokes is a matter of technical fact. The early days of the science of making are dominated by the technical tendency, meaning that what reveals itself in human

7. A. Leroi-Gourhan, *Gesture and Speech* (Cambridge, MA and London: MIT Press, 1993).

8. A. Leroi-Gourhan, *Milieu et Technique* (Paris: Albin Michel, 1973), 336–40; *L'homme et la Matière* (Paris: Albin Michel, 1973), 27–35.

9. Leroi-Gourhan, *L'homme et la matière*, 27.

activities—for example in the invention of primitive wheels and the use of flint—are optimal natural efficiencies. It is only later on that cultural specificities or technical facts begin to impose themselves more distinctly.¹⁰

Leroi-Gourhan's distinction between technical tendency and technical fact thus seeks to provide an explanation for the similarities and differences between technical inventions across different cultures. It sets out from a universal understanding of the process of *hominisation* characterised by the technical tendency of invention, as well as the extension of human organs through technical apparatuses. But how effective is this model in explaining the diversification of technologies throughout the world, and the different pace at which invention proceeds in different cultures? It is in light of these questions that I hope to bring into the discussion the dimensions of cosmology and metaphysics, which Leroi-Gourhan himself rarely discussed.

Here is my hypothesis, one which may appear rather surprising to some readers: *in China, technics in the sense we understand it today—or at least as it is defined by certain European philosophers—never existed*. There is a general misconception that all technics are equal, that all skills and artificial products coming from all cultures can be reduced to one thing called 'technology'. And indeed, it is almost impossible to deny that technics can be understood as the extension of the body or the exteriorisation of memory. Yet they may not be *perceived* or reflected upon in the same way in different cultures.

To put it differently, technics as a general human activity has been present on earth since the time of the Australanthropos; but the philosophical concept of technics cannot

10. Ibid.

assumed to be universal. The technics we refer to here is one that is the subject of philosophy, meaning that it is rendered visible through the birth of philosophy. Understood as such, as a philosophical category, technics is also subject to the history of philosophy, and is defined by particular interrogative perspectives. What we mean by 'philosophy of technology' in this book is not exactly what in Germany is known as *Technikphilosophie*, associated with figures such as Ernst Kapp and Friedrich Dessauer. Rather, it appears with the birth of Hellenic philosophy, and constitutes one of philosophy's core inquiries. And technics thus understood, as an ontological category, I will argue, must be interrogated in relation to a larger configuration, a 'cosmology' proper to the culture from which it emerged.

We know that the birth of philosophy in ancient Greece, as exhibited in the thinking of Thales and Anaximander, was a process of rationalisation, marking a gradual separation between myth and philosophy. Mythology is the source and the essential component of European philosophy, which distanced itself from mythology by naturalizing the divine and integrating it as a supplement to rationality. A rationalist may well argue that any recourse to mythology is a regression, and that philosophy has been able to completely free itself from its mythological origins. Yet I doubt that such a philosophy exists, or ever will. We know that this opposition between *mythos* and *logos* was explicit in the Athenian Academy: Aristotle was very critical of the 'theologians' of the school of Hesiod, and Plato before him argued relentlessly against myth. Through the mouth of Socrates in the *Phaedo* (61a), he says that *mythos* is not his concern but rather the affair of the poets (portrayed as liars in the *Republic*). And yet, as Jean-Pierre Vernant has clearly shown, Plato 'grants an important place in his writings to myth

as a means of expressing both those things that lie beyond and those that fall short of strictly philosophical language'.¹¹

Philosophy is not the language of blind causal necessity, but rather that which at once allows the latter to be spoken, and goes beyond it. The dialectical movement between rationality and myth constitutes the dynamic of philosophy, without which there would be only positive sciences. The Romantics and German Idealists, writing toward the end of the eighteenth century, were aware of this problematic relationship between philosophy and myth. Thus we read in 'The Oldest System-Programme of German Idealism'—published anonymously in 1797, but whose authors are suspected to be, or at least to be associated with, the three friends from the Tübingen Stift, Hölderlin, Hegel, and Schelling—that 'mythology must become philosophical, and the people rational, and philosophy must become mythological in order to make philosophers sensuous. Then eternal unity reigns among us'.¹² Not coincidentally, this insight came at a moment of renewal of philosophical interest in Greek tragedy, chiefly through the works of these three highly influential friends. The implication here is that, in Europe, philosophy's attempt to separate itself from mythology is precisely conditioned by mythology, meaning that mythology reveals the germinal form of such a mode of philosophising. Every demythologisation is accompanied by a remythologisation, since philosophy is conditioned by an origin from which it can never fully detach itself. Accordingly, in order to interrogate what is at stake in the question of technology, we should turn to

11. J.P. Vernant, *Myth and Society in Ancient Greece*, tr. J. Lloyd (New York: Zone Books, 1990), 210–11.

12. 'The "Oldest System-Programme of German Idealism"', tr. E. Förster, *European Journal of Philosophy* 3 (1995), 199–200.

the predominant myths of the origins of technology that have been handed down to us, and at once rejected and extended by Western philosophy. The misconception that technics can be considered as some kind of universal remains a huge obstacle to understanding the global technological condition in general, and in particular the challenge it poses to non-European cultures. Without an understanding of this question, we will all remain at a loss, overwhelmed by the homogeneous becoming of modern technology.

Some recent work has attempted to reclaim what it calls 'Prometheanism', decoupling the social critique of capitalism from a denigration of technology and affirming the power of technology to liberate us from the strictures and contradictions of modernity. This doctrine is often identified with, or at least closely related to, the notion of 'accelerationism'.¹³ But if such a response to technology and capitalism is applied globally, as if Prometheus were a universal cultural figure, it risks perpetuating a more subtle form of colonialism.

So who is Prometheus, and what does Prometheanism stand for?¹⁴ In Plato's *Protagoras*, the sophist tells the story of the Titan Prometheus, also said to be the creator of human beings, who was asked by Zeus to distribute skills to all living beings. His brother Epimetheus took over the job, but having distributed all the skills, found that he had forgotten to provide

13. See R. Mackay and A. Avanessian (eds), *#Accelerate: The Accelerationist Reader* (Falmouth and Berlin: Urbanomic/Merve, 2011), especially Ray Brassier's essay 'Prometheanism and its Critics', 469–87.

14. According to Ulrich von Wilamowitz-Moellendorff, there are two identities of Prometheus: (1) Ionian-Attic Promethos, god of the fire industries, the potter and metalworker honoured in the festival of the Prometheia; and (2) Boeotian-Locrian Prometheus, the Titan whose punishment is part of the great theme of conflict between different generations of the gods. See J.-P. Vernant, *Myth and Thought among the Greeks* (New York: Zone Books, 2006), 264.

for human beings. In order to compensate for the fault of his brother Epimetheus, Prometheus stole fire from the god Hephaestus and bestowed it upon man.¹⁵ Hesiod told another, slightly different version of the story in his *Theogony*, in which the Titan challenged the omnipotence of Zeus by playing a trick with a sacrificial offering. Zeus expressed his anger by hiding fire and the *means of living* from human beings, in revenge for which Prometheus stole fire. Prometheus received his punishment from Zeus: he was chained to the cliff, and an eagle from Hephaestus came to eat his liver during the daytime and allowed it to grow back at night. The story continues in *Works and Days*, where Zeus, angered by Prometheus's deception (*apatē*) or fraud (*dolos*), revenges himself by visiting evil upon human beings. This evil, or *dolos*, is called Pandora.¹⁶ The figure of Pandora, whose name means 'she who gives everything', is twofold: firstly, she stands for fertility, since in another ancient account, according to Vernant, she has another name, Anesidora, the goddess of the earth;¹⁷ secondly, she stands for idleness and dissipation, since she is a *gastēr*, 'an insatiable belly devouring the *bios* or nourishment that men procure for themselves through their labor'.¹⁸

It is only in Aeschylus that Prometheus becomes the father of all technics and the master of all crafts (*didasklos technēs pasēs*),¹⁹ whereas before he was the one who stole fire, hiding

15. Plato, 'Protagoras', tr. S. Lombardo and K. Bell, in J.M. Cooper (ed.) *Complete Works* (Indianapolis, IN: Hackett, 1997), 320c–328d.

16. Vernant emphasises both acts of Prometheus and Zeus as *dolos*; see Vernant, *Myth and Society*, 185.

17. Vernant, *Myth and Thought*, 266.

18. *Ibid.*, 174.

19. *Ibid.*, 271.

it in the hollow of a reed.²⁰ Before Prometheus's invention of technics, human beings were not sensible beings, since they saw without seeing, listened without hearing, and lived in disorder and confusion.²¹ In Aeschylus's *Prometheus Bound*, the Titan declares that 'all the *technai* that mortals have, come from Prometheus'. What exactly are these *technai*? It would be difficult to exhaust all possible meanings of the word, but it is worth paying attention to what Prometheus says:

What's more, for them I invented Number [*arithmon*], wisdom above all others. And the painstaking putting together of Letters: to be their memory of everything, to be their Muses' mother, their handmaid.²²

In assuming a universal Prometheanism, one assumes that all cultures arise from *technē*, which is originally Greek. But in China we find another mythology concerning the creation of human beings and the origin of technics, one in which there is no Promethean figure. It tells instead of three ancient emperors, who were leaders of ancient tribes (先民): Fuxi (伏羲), Nüwa (女娲) and Shennong (神農).²³ The female goddess Nüwa, who is represented as a half-human, half-snake figure, created human beings from clay.²⁴ Nüwa's brother, and

20. Ibid., 265.

21. Ibid.

22. Aeschylus, *Prometheus Bound*, tr. C. Herrington and J. Scully (New York: Oxford University Press, 1989), 441–506; quoted by D. Roochnik, *Of Art and Wisdom: Plato's Understanding of Techne* (University Park, PA: Pennsylvania State University Press, 1996), 33.

23. There are various accounts of who the three emperors were; the list here is the most commonly used.

24. Concerning the use of clay, different versions of the tale exist: for example,

later husband, is Fuxi, a half-dragon, half-human figure who invented the bagwa (八卦)—the eight trigrams based on a binary structure. Several classical texts document the process whereby Nüwa used five coloured stones to repair the sky in order to stop the water flooding in great expanses and fire blazing out of control.²⁵ Shennong has quite an ambiguous identity, since he is often associated with two other names, Yan Di (炎帝) and Lie Shan Shi (烈山氏).²⁶ In this association, Shennong, which literally means 'divine farmer', is also the god of fire, and after his death becomes the god of the kitchen (the character Yan [炎] consists of two repeated instances of the character for fire [火]). It is recognised by historians that it most likely comes from the use of fire in the household, rather than sun worship.)²⁷ As the name indicates, Shennong also invented agriculture, medicine, and other technics. According to the *Huainanzi*, an ancient Chinese text originating in a series of scholarly debates held at the court of Liu An, King of Huainan (179–122 BC) sometime before 139 BC, he risked poisoning himself by trying hundreds of plants so as to distinguish

according to the *Huainanzi*, the creation of humans was not only the work of Nüwa but a collective work with other gods: 'The Yellow Emperor produced *yin* and *yang*. Shang Piao produced ears and eyes; Sang Lin produced shoulders and arms. Nüwa used these to carry out the seventy transformations.' J. S. Major, S. A. Queen, A. S. Meyer, and H. D. Roth (eds, tr.), *The Huainanzi: A Guide to the Theory and Practice of Government in Early Han China, Liu An, King of Huainan*, (New York: Columbia University Press, 2010), 17:25. For Chinese see: 《淮南子·說林訓》：黃帝生陰陽，上駢生耳目，桑林生臂手：此女媧所以七十化也。

25. See the *Huainanzi*, chapter 6: 'Surveying Obscurities', 6.7 (《淮南子·覽冥篇》).

26. Li Gui Min (李桂民), 'The Relation between Shennong, Lie Shan and Yan Di and their Recognition in Antiquity' (神農氏、烈山氏、炎帝的糾葛與遠古傳說的認識問題), *Theory Journal* (理論學刊), 3: 217 (March 2012), 108–12.

27. *Ibid.*, 109.

what is edible from what is poisonous. The broken sky that Nüwa had to repair resulted from a war between Yan Di's descendant, the god of fire Zhu Rong (祝融) and the god of water Gong Gong (共工).²⁸ Note that the gods of agriculture and fire came from different systems of mythology, and that, although they are called gods, they are only recognized as such after their deaths—originally, they were leaders of the ancient tribes. Unlike Greek mythology, then, in which the Titan revolted against the gods by bestowing fire and means of subsistence upon human beings, thus raising them above animals, in Chinese mythology there was no such rebellion and no such transcendence granted; this endowment is seen instead as owing to the benevolence of the ancient sages.

In a dialogue with Vernant, French sinologist Jacques Gernet remarked that the radical separation between the world of the gods and the world of man that was necessary for the development of Greek rationality didn't happen in China.²⁹ Thought of the Greek type did eventually arrive in China, but it arrived too late to exercise any formative influence—the Chinese had already 'naturalised the divine'.³⁰ In response, Vernant also pointed out that the polar terms characteristic

28. Again, in the Chinese mythologies there are various accounts which differ as to whether Shennong or Nüwa came first, and whether Zhurong is the descendant of Shennong or Huang Di; here we relate the most well-known version.

29. Vernant, *Myth and Society*, 86.

30. Gernet also commented elsewhere on the difference between God in Judaism and Christianity and the Heaven in Chinese culture: the former (Jewish and Christian) is the god of pastors, he speaks, commands; while the Chinese heaven does not speak, 'it contents itself to produce the seasons and to act continuously by way of its seasonal influxes'. See J. Gernet, *Chine et Christianisme: action et réaction* (Paris: Gallimard, 1982), 206, cited also by F. Jullien, *Procès ou Création: une introduction à la pensée des lettrés chinois* (Paris: Éditions du Seuil, 1999), 45.

of Greek culture—man/gods, invisible/visible, eternal/mortal, permanent/changing, powerful/powerless, pure/mixed, certain/uncertain—were absent in China, and suggested that this might partially explain why it was the Greeks who invented tragedy.³¹

I do not mean simply to gesture towards the obvious fact that there are different mythologies concerning creation and technics in China, Japan, India, or elsewhere. The point, rather, is that each of these mythologies gives a different origin for technics, corresponding in each case to different relations between the gods, technics, humans, and the cosmos. Apart from some efforts in anthropology to discuss the variation of practices across cultures, these relations have been ignored, or their impact has not been taken into account, in the discourse on technics and technologies. I propose that it is only by tracing different accounts of the genesis of technicity³² that we can understand what we mean when we speak of different ‘forms of life’, and thus different relations to technics.

The effort to relativise the concept of technics challenges existing anthropological approaches as well as historical studies, which rest on the comparison of the advancement of either individual technical objects or technical systems (in the sense of Bertrand Gille) in different periods among different cultures.³³

31. Jullien, *Procès ou Création*., 98–100.

32. ‘Technicity’ is a term I borrow from Gilbert Simondon, according to whom technological development should be understood as a lineage of constant bifurcation that begins during the magical phase of human societies.

33. French historian of technology Bertrand Gille (1920–1980) proposed to analyse the history of technology according to what he calls ‘technical systems’. In *Histoire des techniques* (Paris: Gallimard, 1978), 19, Gille defines a ‘technical system’ as follows: ‘All technics are to diverse degrees dependent on one another, and there needs to be a certain coherence between them: this ensemble of the different levels of coherence of all the structures, of all the

Scientific and technical thinking emerges under cosmological conditions that are expressed in the relations between humans and their milieu, which are never static. For this reason I would like to call this conception of technics *cosmotechnics*. One of the most characteristic examples of Chinese cosmotechnics, for example, is Chinese medicine, which uses the same principles and terms found in cosmology, such as *Yin-Yang*, *Wu Xing*, harmony, and so on, to describe the body.

§2. COSMOS, COSMOLOGY, AND COSMOTECHNICS

Here one may ask whether Leroi-Gourhan's analysis concerning technical facts is not already sufficient to explain different technicities. It is true that Leroi-Gourhan brilliantly documented technical tendencies and the diversification of technical facts in his work, documenting different lineages of technical evolution and the influences of the milieu on the fabrication of tools and products. Yet Leroi-Gourhan's research has a limit (even if this also constitutes the strength and singularity of his research), one that seems to stem from his focus upon the individualisation of technical objects so as to construct a technical genealogy and technical hierarchy

ensembles and of all the procedures, composes what one can call a technical system.' Technical systems underwent mutation in the face of technological revolutions, for example during the mediaeval period (twelfth and thirteenth centuries), the Renaissance (fifteenth century), and the industrial revolution (eighteenth century). The researchers Yao Dazhi and Per Högselius accused Gille's analysis of being Western-centric, in the sense that Gille used European technical systems as his primary references and, in doing so, ignored Joseph Needham's observation that Chinese technologies seem to have been more advanced than Europe about two thousand years ago. For the debate see Yao Dazhi and P. Högselius, 'Transforming the Narrative of the History of Chinese Technology: East and West in Bertrand Gille's *Histoire des Techniques*', *Acta Baltica Historiae et Philosophiae Scientiarum* 3:1 (Spring 2015), 7–24.

applicable across different cultures. From this perspective, we can understand why he would have deliberately limited himself to an explanation of technical genesis based on the study of the development of tools: as he lamented in the postscript to *L'homme et la matière*, written thirty years after its original publication, most classic ethnographies dedicate their first chapter to technics, only to turn immediately to social and religious aspects for the remainder.³⁴ In Leroi-Gourhan's work, technics becomes autonomous in the sense that it acts as a 'lens' through which the evolution of the human, civilisation, and culture can be retrieved. However, it is difficult to attribute the singularity of technical facts to the 'milieu' alone, and I do not believe it is possible to avoid the question of *cosmology* and therefore that of *cosmotechnics*.

Allow me to pose this question in the form of a Kantian antinomy: (1) Technics is anthropologically universal, and since it consists in the extension of somatic functions and the externalisation of memory, the differences produced in different cultures can be explained according to the degree to which factual circumstances inflect the technical tendency;³⁵ (2) Technics is not anthropologically universal; technologies in different cultures are affected by the cosmological understandings of these cultures, and have autonomy only within a certain cosmological setting—technics is always *cosmotechnics*. The search for a resolution of this antinomy will be the Ariadne's thread of our inquiry.

I will give a preliminary definition of cosmotechnics here: it means the unification between the cosmic order and the moral order through technical activities (although the term

34. Leroi-Gourhan, *L'homme et la matière*, 315.

35. *Ibid.*, 29–35.

cosmic order is itself tautological since the Greek word *kosmos* means order). The concept of cosmotechnics immediately provides us with a conceptual tool with which to overcome the conventional opposition between technics and nature, and to understand the task of philosophy as that of seeking and affirming the organic unity of the two. In the remainder of this Introduction, I will investigate this concept in the work of the twentieth-century philosopher Gilbert Simondon and that of some contemporary anthropologists, notably Tim Ingold.

In the third part of *On the Mode of Existence of Technical Objects* (1958), Simondon sets out a speculative history of technicity, affirming that it is not sufficient just to investigate the technical lineage of objects; it is also necessary to understand that it implies 'an *organic* character of thinking and of the mode of being in the world'.³⁶ According to Simondon, the genesis of technicity begins with a 'magical' phase, in which we find an original unity anterior to the subject/object division. This phase is characterised by the separation and cohesion between ground and figure. Simondon took these terms from Gestalt psychology, where the figure cannot be detached from ground, and it is the ground that gives form, while at the same time form also imposing limitations on the ground. We can conceive the technicity of the magical phase as a field of forces reticulated according to what he calls 'key points' (*pointes clés*), for example high points such as mountains, giant rocks, or old trees. The primitive magical moment, the original mode of cosmotechnics, is bifurcated into technics and religions, in which the latter retain an equilibrium with the former, in the continued effort to obtain unity. Technics and religion yield both theoretical and practical parts: in religion,

36. Simondon, *Du mode d'existence des objets techniques*, 213.

they are known as ethics (theoretical) and dogma (practical); in technics, science and technology. The magical phase is a mode in which there is hardly any distinction between cosmology and cosmotechnics, since cosmology only makes sense here when it is part of everyday practice. There is a separation only during the modern period, since the study of technology and the study of cosmology (as astronomy) are regarded as two different disciplines—an indication of the total detachment of technics from cosmology, and the disappearance of any overt conception of a cosmotechnics. And yet it would *not* be correct to say that there is no cosmotechnics in our time. There certainly is: it is what Philippe Descola calls ‘naturalism’, meaning the antithesis between culture and nature, which triumphed in the West in the seventeenth century.³⁷ In this cosmotechnics, the cosmos is seen as an exploitable standing-reserve, according to what Heidegger calls the world picture (*Weltbild*). Here we should state that for Simondon, there remains some possibility of reinventing cosmotechnics (although he doesn’t use the term) for our time. In an interview on mechanology, Simondon talks about the TV antenna, beautifully describing what this convergence (between modern technology and natural geography) should look like. Even though, as far as I am aware, Simondon did not engage further with this subject, it will be our task to take what he meant to say further:

Look at this TV antenna of television as it is [...] it is rigid but it is oriented; we see that it looks into the distance, and that it can receive (signals) from a transmitter far away. For me, it appears to be more than a symbol; it seems to represent a gesture of

37. P. Descola, *Beyond Nature and Culture*, tr. J. Lloyd (Chicago and London: Chicago University Press, 2013), 85.

sorts, an almost magical power of intentionality, a contemporary form of magic. In this encounter between the highest place and the nodal point, which is the point of transmission of hyperfrequencies, there is a sort of 'co-naturality' between the human network and the natural geography of the region. It has a poetic dimension, as well as a dimension having to do with signification and the encounter between significations.³⁸

Retrospectively, we may find that Simondon's proposition is incompatible with the distinction between magic and science made by Lévi-Strauss in *The Savage Mind*, published a few years later (1962). Magic, or rather the 'science of the concrete', according to Lévi-Strauss cannot be reduced to a stage or phase of technical and scientific evolution,³⁹ whereas for Simondon, as we have seen, the magical phase occupies the first stage of the genesis of technicity. The science of the concrete, according to Lévi-Strauss, is event-driven and sign-oriented, while science is structure-driven and concept-oriented. Thus for Lévi-Strauss there is a discontinuity between the two, but it seems that this discontinuity is only legitimated when one compares a non-European mythical thought with European scientific thought. In Simondon, on the other hand, the magical retains a continuity with the development of science and technology. I would suggest that what Simondon hints at in the third part of *On the Mode of Existence of Technical Objects* is precisely a 'cosmotechnics'. Once we accept the concept of cosmotechnics, instead of maintaining

38. G. Simondon, 'Entretien sur la méchanologie', *Revue de synthèse* 130:6, no. 1 (2009), 103–32: 111.

39. C. Lévi-Strauss, *The Savage Mind* (London: Weidenfeld and Nicolson, 1966), 13.

the opposition between the magic/mythical and science and a progression between the two, we will be able to see that the former, characterized as the 'speculative organization and exploitation of the sensible world in sensible terms',⁴⁰ is not necessarily a regression in relation to the latter.

Some recent work has suggested that close consideration of non-Western cultures, since it demonstrates a pluralism of ontologies and cosmologies, indicates a way out of the modern predicament. Anthropologists such as Philippe Descola and Eduardo Viveiros de Castro look to Amazonian cultures in order to deconstruct the nature/culture division in Europe. Similarly, philosophers such as François Jullien and Augustin Berque attempt to compare European culture with Chinese and Japanese culture so as to depict a profound pluralism that cannot be easily classified according to simple schemes, and to reinterpret Western attempts to overcome modernity. In his seminal work *Beyond Nature and Culture*, Descola not only suggests that the nature/culture division developed in the Occident is not universal, but also maintains that it is a marginal case. Descola describes four ontologies: namely, naturalism (the nature/culture division), animism, totemism, and analogism. Each of these ontologies inscribes nature in different ways, and in non-modern practices one finds that the nature/culture division that has been taken for granted since European modernity does not hold.⁴¹ Descola cites Social anthropologist Tim Ingold's observation that philosophers have seldom asked, 'What makes humans animals of a particular kind?', their typical preferred question about naturalism being

40. Ibid, 16.

41. See Descola, *Beyond Nature and Culture*, especially Part III.

'What makes humans different in kind from animals?'⁴² This is not only the case among philosophers, as Descola points out; for ethnologists also fall into the dogma of naturalism which insists on the uniqueness of the human being, and the assumption that humans are differentiated from other beings by means of culture.⁴³ In naturalism, one finds discontinuity in interiority and continuity in physicality; in animism, continuity in interiority and discontinuity in physicality.⁴⁴ We reproduce Descola's definitions of the four ontologies below:

Similar interiority, Dissimilar physicality	Animism	Totemism	Similar interiority, Similar physicality
Dissimilar interiority, Similar physicality	Naturalism	Analogism	Dissimilar interiority, Dissimilar physicality

These various ontologies imply different conceptions of nature and different forms of participation; and indeed, as Descola pointed out, the antithesis between nature and culture in naturalism is rejected in other conceptions of 'nature'. What Descola says about nature might also be said of technics, which in Descola's writings is abstracted as 'practice'—a term that avoids the technics/culture division. However, calling it 'practice' may obscure the role of technics; this is the reason we speak of cosmotechnics rather than cosmology.

42. Descola, *Beyond Nature and Culture*, 178.

43. *Ibid.*, 180.

44. *Ibid.*, 122.

Although he does not employ a term analogous to 'cosmotech-nics', Ingold perceives this point clearly. Drawing on Gregory Bateson, Ingold proposes that there is a unity between practices and the environment to which they belong. This leads to his proposal for a sentient ecology,⁴⁵ which is mediated and operated according to affective relations between human beings and their environments. One example he gives concerning hunter-gatherer society helps to clarify what he means by 'sentient ecology': hunter-gatherers' perception of the environment, he tells us, is embedded in their practices.⁴⁶ Ingold points out that the Cree people of northeastern Canada have an explanation for why reindeers are easy to kill: the animals offer themselves voluntarily 'in a spirit of good will or even love towards the hunter'.⁴⁷ The encounter between animal and hunter is not simply a question of 'to shoot or not to shoot', but rather one of cosmological and moral necessity:

At that crucial moment of eye-to-eye contact, the hunter *felt* the overwhelming presence of the animal; he felt as if his own being were somehow bound up or intermingled with that of the animal—a feeling tantamount to love and one that, in the domain of human relations, is experienced in sexual intercourse.⁴⁸

Rethinking senses such as vision, hearing, and touch by invoking Hans Jonas, James Gibson, and Maurice Merleau-Ponty, Ingold attempts to show that, when we reinvestigate the

45. T. Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* (London: Routledge, 2011), 24.

46. *Ibid.*, 10.

47. *Ibid.*, 13.

48. *Ibid.*, 25.

question of the senses, it is possible to reappropriate this sentient ecology, which is totally ignored in modern technological development. And yet in this conception of human and environment, the relation between environment and cosmology is not very clear, and this way of analysing living beings with the environment risks reduction to a cybernetic feedback model such as Bateson's, thereby undermining the absolutely overwhelming and contingent role of the cosmos.

Simondon holds a similar view on the relation between human being and the outer world as figure and ground—a functioning model of cosmotechnics, since the ground is limited by the figure, and the figure is empowered by the ground. Owing to their detachment, in religion the ground is no longer limited by the figure, and therefore the unlimited ground is conceived as a godlike power; whereas inversely, in technics, the figure overtakes the ground and leads to the subversion of their relation. Simondon therefore proposes a task for philosophical thinking: to produce a convergence that reaffirms the unity of figure and ground,⁴⁹ something that could be understood as the search for a cosmotechnics. For example, in considering Polynesian navigation—the ability to navigate among a thousand islands without any modern apparatus—as a cosmotechnics, we might focus not on this ability as a skill, but rather on the figure-ground relation that prefigures this skill.

The comparison between the work of Ingold and other ethnologists and Simondon indicates two different ways in which the question concerning technology in China might be approached. In the first, we are given a way in which to comprehend cosmology, which conditions social and political life; while in the second, philosophical thought is reconfigured as a search

49. Simondon, *Du mode d'existence des objets techniques*, 217–18.

for the ground of the figure, whose relation seems to be more and more distanced due to the increasing specialization and division of professions in modern societies. The cosmotechnics of ancient China and the philosophical thought developed throughout its history seem to me to reflect a constant effort to bring about precisely such a unification of ground and figure.

In Chinese cosmology, one finds a sense other than vision, hearing, and touch. It is called *Ganying* (感應), literally meaning 'feeling' and 'response', and is often (as in the work of sinologists such as Marcel Granet and Angus Graham) understood as 'correlative thinking';⁵⁰ I prefer to call it *resonance*, following Joseph Needham. It yields a 'moral sentiment' and further, a 'moral obligation' (in social and political terms) which is not solely the product of subjective contemplation, but rather emerges from the resonance between the Heaven and the human, since the Heaven is the ground of the moral.⁵¹ The existence of such a resonance rests upon the presupposition of unification between the human and the Heaven (天人合一), and therefore *Ganying* implies (1) a homogeneity in all beings, and (2) an organicity of the relation between part and part,

50. A. C. Graham, *Yin-Yang and the Nature of Correlative Thinking*, (Singapore: National University of Singapore, 1986)

51. Concerning the origin of the moral order, it is difficult, for instance, to find an explanation in Henri Bergson's *The Two Sources of Morality and Religion* (tr. A. Audra and C. Brereton [London: Macmillan, 1935]), Bergson distinguishes two kinds of morals: one is a closed morals related to social obligation and habitude, while the other is what he calls an open morals related to 'call of the hero [*appel du héros*]'. In the latter form, one doesn't yield to pressure, but to fascination; according to Bergson these two forms of the moral coexist, and neither exists in pure form. It would certainly be worthwhile to further examine Bergson's concept of the moral and its implications for the Chinese cosmotechnics that I attempt to sketch out here, although it seems to me that Bergson's understanding of the moral is rather limited to the Western tradition, especially the Greeks; in China, the cosmos played a determining role, so that any heroic act could only be an accordance with the Heaven.

and between part and whole.⁵² This homogeneity can be found already in *Zhou Yi—Xi Ci* II,⁵³ where the ancient Bao-xi (another name for Fuxi) created the eight trigrams to reflect the connection of all being through these homogeneities:

Anciently, when Bao-xi had come to the rule of all under Heaven, looking up, he contemplated the brilliant *forms* exhibited in the sky, and looking down he surveyed the *patterns* shown on the earth. He contemplated the ornamental *appearances* of birds and beasts and the (different) *suitabilities* of the soil. Near at hand, in his own person, he found things for consideration, and the same at a distance, in things in general. On this he devised the eight trigrams, to show fully the attributes of the spirit-like and intelligent (operations working secretly), and to classify the qualities of the myriads of things.⁵⁴

Words such as 'forms', 'patterns', and 'appearances' are essential in understanding the resonances between the Heaven and the human. They imply an attitude towards science in China which (according to the organismic readings offered by authors such as Joseph Needham) differs from that of Greece, since it is resonance that lends authority to rules and laws, whereas for the Greeks laws (*nōmoi*) are closely related

52. Huang Junjie (黃俊傑), 東亞儒學史的新視野 [New Perspectives on the History of Confucianism in East Asia] (Taiwan: Taiwan National University Press, 2015), 267.

53. According to historical documents, there were three versions of the *I Ching* (易經, or *The Book of Changes*) in China, but only one, *Zhou Yi* (周易), has been preserved and circulated. There are seven classic commentaries on the *I Ching*, known as *Yi Zhuan* (易傳), including the *Xi Ci* quoted below; together, these ten texts (including the lost ones) are known as the 'ten wings'.

54. *Xi Ci* II, tr. J. Legge, <<http://ctext.org/book-of-changes/xi-ci-xia/ens>> [emphasis mine].

to geometry, as Vernant frequently points out. But how is this resonance to be sensed? Confucianism and Daoism both postulate a cosmological ‘heart’ or ‘mind’ (examined in §18 below) able to resonate with the external environment (for example in *Luxuriant Dew of the Spring and Autumn Annals*)⁵⁵ as well as with other beings (for example in *Mencius*). We will see later how it is this sense that leads to the development of a moral cosmology or moral metaphysics in China, which is expressed in the unification between the Heaven and the human. Importantly for our argument here, in the context of technics such unification is also expressed as the unification of *Qi* (器, literally translated as ‘tools’) and *Dao* (道, often transliterated as ‘tao’). For example, in Confucianism, *Qi* implies a cosmological consciousness of the relations between humans and nature that is demonstrated in rituals and religious ceremonies. As we discuss in Part 1, the Confucian classic *Li Ji* (the *Book of Rituals*) contains a long section entitled *Li Qi* (禮器, ‘the vessels of rituals’) documenting the importance of technical objects in the fulfilment of the *Li* (禮, ‘rituals’), and according to which morality can only be maintained through the proper use of *Li Qi*.

It will be the task of Part 1 to elaborate on this ‘correlative thinking’ in China, and on the dynamic relation between *Qi* and *Dao*. I believe that the concept of cosmotechnics allows us to trace different technicities, and contributes to opening up the plurality of relations between technics, mythology, and cosmology—and thereby to the embracing of the different relations between the human and technics inherited from different mythologies and cosmologies. Certainly Prometheanism

55. Authorship of this work is attributed to the important Han Confucian Dong Zhongshu (董仲舒, 179–104 BC), who we will discuss below.

is one such relation, but it is highly problematic to take it as a universal. However, I am certainly not proposing to advocate any kind of cultural purity here, or to defend it, as origin, against contamination. Technics has served as a means of communication between different ethnic groups, which immediately calls into question any concept of an absolute origin. In our technological epoch, it is the driving force of globalisation—in the sense both of a converging force acting through space, and a synchronising force in time. Yet a radical alterity will have to be asserted in order to leave room for heterogeneity, and thereby to develop different *epistemes* based on traditional metaphysical categories, a task which opens the way to the veritable question of locality. I use the term *episteme* with reference to Michel Foucault, for whom it denotes a social and scientific structure that functions as a set of criteria of selection, and determines the discourse of truth.⁵⁶ In *The Order of Things*, Foucault introduces a periodisation of three *epistemes* in the Occident: Renaissance, Classical, and Modern. Foucault later found that his introduction of the term *episteme* had led to an impasse, and developed a more general concept, namely that of the *dispositif*.⁵⁷ The transition from *episteme* to *dispositif* is a strategic move to a more immanent critique, which Foucault was able to apply in a more contemporary analysis; looking back

56. M. Foucault, *The Order of Things: An Archeology of the Human Sciences* (New York: Vintage Books, 1994), xxi: 'What I am attempting to bring to light is the epistemological field, the episteme in which knowledge, envisaged apart from all criteria having reference to its rational value or to its objective forms, grounds its positivity and thereby manifests a history which is not that of its growing perfection, but rather that of its conditions of possibility; in this account, what should appear are those configurations within the space of knowledge which have given rise to the diverse forms of empirical science.'

57. M. Foucault, 'Le jeu de Michel Foucault (Entretien sur l'histoire de la sexualité)', in *Dits et Écrits III* (Paris: Gallimard, 1994), 297–329: 301.

during an interview in 1977, around the time of the publication of the *History of Sexuality*, Foucault proposed to define *episteme* as a form of *dispositif*: as that 'strategic *dispositif* which allows the selection, among all possible enunciations, of those that will be acceptable within [...] a field of scientificity of which one can say: this is true or false'.⁵⁸ I take the liberty of reformulating the concept of *episteme* here: for me it is a *dispositif* which, in the face of modern technology, may be reinvented on the basis of the traditional metaphysical categories in order to reintroduce a form of life and to reactivate a locality. Such reinventions can be observed, for example, following the social, political, and economic crises that occurred in each epoch in China (and we can surely find examples in other cultures): the decline of the Zhou Dynasty (1122–256 BC), the introduction of Buddhism in China, the country's defeat in the Opium Wars, etc. At these points we observe the reinvention of an *episteme*, which in turn conditions aesthetic, social, and political life. The technical systems that are in the process of forming today, fuelled by digital technologies (for example, 'smart cities', the 'internet of things', social networks, and large-scale automation systems) tend to lead to a homogeneous relation between humanity and technics—that of intensive quantification and control. But this only makes it more important and more urgent for different cultures to reflect on their own history and ontologies in order to adopt digital technologies without being merely synchronized into the homogenous 'global' and 'generic' *episteme*.

The decisive moment in modern Chinese history came with the two Opium Wars in the mid-nineteenth century, in which the Qing dynasty (1644–1912) was comprehensively defeated

58. Ibid.

by the British army, leading to the opening up of China as a quasi-colony for Western forces, and instigating China's modernisation. Lack of technological competence was considered by the Chinese to be one of the major reasons for this defeat. They therefore felt with urgency the need for rapidly modernisation via technological development, in the hope of putting an end to the inequality between China and the Western forces. However, China was not able to absorb Western technology in the way that the dominant Chinese reformists at that time wished, largely due to the ignorance and misunderstanding of technology. For they maintained a belief, which retrospectively seems rather 'Cartesian', that it would be possible to separate Chinese thought—the mind—from technologies understood merely as instruments; that the former, the ground, could remain intact without being affected by the importation and implementation of the technological figure.

On the contrary, technology has ended up subverting any such dualism, and has constituted itself as ground rather than as figure. More than a century and a half has passed since the Opium Wars. China has lived through further catastrophes and crises owing to the change of regimes and all manner of experimental reforms. During this time there have been many reflections on the question of technology and modernisation, and the attempt to maintain a dualism between thinking mind and technological instrument has been revealed as a failure. More seriously, in recent decades any such reflection has been rendered impotent in the face of continuing economic and technological booms. A kind of ecstasy and hype has emerged in its stead, propelling the country into the unknown: all of a sudden, it finds itself as if in the midst of an ocean without being able to see any limit, any destination—the predicament described by Nietzsche in *The Gay Science*, and which remains

a poignant image for describing modern man's troubling situation.⁵⁹ In Europe, various concepts such as the 'postmodern' or 'posthuman' have been invented to name some imaginary exodus from this situation; but it will not be possible to find the exit without directly addressing and confronting the question of technology.

With all of the above questions in mind, this work aims to open up a new inquiry into modern technology, one that does not take Prometheanism as its fundamental presupposition. The work is divided into two parts. Part 1 is intended to be a systematic and historical survey of 'technological thought' in China in comparison to its counterpart in Europe. It serves as a new starting point for understanding what is at stake here, as well as for reflecting on the urgency of this investigation. Part 2 is an investigation into the historical-metaphysical questions of modern technology, and aims to shed new light on the obscurity in which the question of technology dwells in China, especially in the Anthropocene.

§3. TECHNOLOGICAL RUPTURE AND METAPHYSICAL UNITY

As implied by the concept of cosmotechnics outlined above, the account of technology given here does not limit itself to the historical, social, and economic levels; we have to move beyond these levels in order to reconstitute a metaphysical unity. By 'unity', I do not mean a political or cultural identity, but a unity between practice and theory, or more precisely a *form of life* that maintains the coherence (if not necessarily the harmony) of a community. The fragmentation of forms of life in

59. F. Nietzsche, *The Gay Science*, tr. J. Nauckhoff (Cambridge: Cambridge University Press, 2001), 119 (§124).

both European and non-European countries is largely a result of an inconsistency between theory and practice. But in the East this gap is revealed not as a mere disturbance but as the 'deracination' (*Entwurzelung*) described by Heidegger—as a total discontinuity. The transformation of practices brought about by modern technology outstrips the ancient categories that had previously applied. For example, as I discuss in Part 1, the Chinese have no equivalents of the categories that the Greeks called *technē* and *physis*. Hence in China the force of technology dismantles the metaphysical unity of practice and theory, and creates a rupture, which still awaits unification. Of course, this is not something that is only happening in the East. In the West, as Heidegger described, the emergence of the category 'technology' no longer shares the same essence as *technē*. The question concerning technology should ultimately serve as a motivation to take up the question of Being—and, if I might say so, to create a new metaphysics; or, even better, a new cosmotechnics.⁶⁰ In our time, this unification or indifference does not present itself as a quest for a ground, but rather exhibits itself as both an original ground (*Urgrund*) and an unground (*Ungrund*): *Ungrund* because it is open to alterities; *Urgrund* as a ground that resists assimilation. Hence the *Urgrund* and the *Ungrund* should be considered as a unity, much like being and nothingness. The quest for unity is properly speaking the *telos* of philosophy, as Hegel maintained in his treatise on Schelling and Fichte.⁶¹

60. Although Heidegger did not explicitly make this claim, in his commentary on Nietzsche he refers to metaphysics as a force of unification that overlooks all beings. However, we have to bear in mind that Heidegger's reading of the history of Western metaphysics is only one possible interpretation: see M. Heidegger, *GA 6.2 Nietzsche Band II* (Frankfurt am Main: Klostermann, 1997), 342–3.

61. G. W. F. Hegel, *The Difference between Fichte's and Schelling's System*

As we shall see, to answer the question concerning technology in China is not to give a detailed history of the economic and social development of technologies—something that historians and sinologists such as Joseph Needham have already done in various brilliant ways—but rather to describe the transformation of the category *Qi* (器) in its relation to *Dao* (道). Let me be more precise on this point. Normally technics and technology are translated in Chinese as *jishu* (技術) and *keji* (科技). The first term means ‘technique’ or ‘skill’; the second is composed of two characters, *ke* meaning ‘science’ (*ke xue*) and *ji* meaning ‘technique’ or ‘applied science’. The question is not whether these translations adequately render the meanings of the Western words (one has to note that the translations are newly-coined terms), but rather whether they create the illusion that Western technics have an equivalent in the Chinese tradition. Ultimately, the eagerness these Chinese neologisms express to show that ‘we also have these terms’ obscures the true question of technics. Rather than relying on these potentially confusing neologisms, therefore, I propose to reconstruct the question of technics from the ancient philosophical categories *Qi* and *Dao*, tracing various turning points at which the two were separated, reunified, or even totally disregarded. The relation between *Qi* and *Dao* characterises, properly speaking, the thinking of technics in China, which is also a unification of moral and cosmological thinking in a cosmotechnics. It is in associating *Qi* and *Dao* that the question of technics reaches its metaphysical ground. It is also in entering into this relation that *Qi* participates in moral cosmology, and intervenes in the metaphysical system

according to its own evolution. Thus we will show how the relation between *Qi* and *Dao* has varied throughout the history of Chinese thought, following continual attempts to reunify *Dao* and *Qi* (道器合一), each with different nuances and different consequences: *Qi* enlightens *Dao* (器以明道), *Qi* carries *Dao* (器以載道) or *Qi* in the service of *Dao* (器為道用), *Dao* in the service of *Qi* (道為器用), and so on. Below we trace these relations from the era of Confucius and Laozi into contemporary China. Finally, we show how the imposition of a superficial and reductive materialism ended up completely separating *Qi* and *Dao*, an event that may be considered as the breakdown of the traditional system, and may even be termed China's own 'end of metaphysics'—although once again, here we should emphasise that what is called 'metaphysics' in the European language is not equivalent to its usual translation in Chinese, *Xing er Shang Xue* (形而上學), which actually means 'that which is above forms', and is a synonym of *Dao* in the *I Ching*. What Heidegger terms the 'end of metaphysics', then, is by no means the end of *Xing er Shang Xue*—because, for Heidegger, it is the completion of metaphysics that gives us modern technoscience; whereas *Xing er Shang Xue* cannot give rise to modern technology, since firstly it doesn't have the same source as the *metaphysikā*, and secondly, as we will explain in detail below, if we follow New Confucian philosopher Mou Zongsan, Chinese thought has always given priority to the noumenon over the phenomenon, and it is precisely because of this philosophical attitude that a different cosmotechnics developed in China.

It is not my aim, however, to argue that the traditional Chinese metaphysics is sufficient and that we can simply go back to it. On the contrary, I would like to show that, while it is insufficient to simply revive the traditional metaphysics, it is

crucial that we *start* from it in order to seek ways other than affirmative Prometheanism or neocolonial critique to think and to challenge global technological hegemony. The ultimate task will be to reinvent the *Dao-Qi* relation by situating it historically, and asking in what way this line of thinking might be fruitful not only in the construction of a new Chinese philosophy of technology, but also in responding to the current state of technological globalisation.

Inevitably, this task will also have to respond to the haunting dilemma of what is called 'Needham's question': Why didn't modern science and technology emerge in China? In the sixteenth century, Europeans were attracted by China: by its aesthetics and its culture, but also by its advanced technologies. For example, Leibniz was obsessed with Chinese writing, especially by his discovery that the *I Ching* is organised according to precisely the binary system he himself had proposed. He thus believed he had discovered in the Chinese writings an advanced mode of combinatorics. After the sixteenth century, though, science and technology in China were outstripped by the West. According to the dominant view, it is the modernisation of science and technology in Europe during the sixteenth and seventeenth centuries that accounts for this change. Such an explanation is 'accidental' in the sense that it relies on a rupture or an event; but as we shall try to elaborate, there may be another explanation, from the standpoint of metaphysics.

In asking why modern science and technology did not emerge in China, we will discuss the tentative answers given both by Needham himself, and by the Chinese philosophers Feng Youlan (1895–1990) and Mou Zongsan (1909–1995). Mou's answer is the most sophisticated and speculative of the two, and the solution he proposes demands a reunification of two metaphysical systems: one that speculates on the

noumenal world and makes it the core constituent of a moral metaphysics, and another that tends to limit itself to the level of phenomena, and in doing so furnishes the terrain for highly analytical activities. This reading is clearly influenced by Kant, and indeed Mou frequently employs Kant's vocabulary. Mou recalls that, when he first read Kant, he was struck by the fact that what Kant calls the noumenon is at the core of Chinese philosophy, and that it is the respective focus on noumenon and phenomenon that marks the difference between Chinese and European metaphysics.⁶² Indulging in speculation on the noumenon, Chinese philosophy tends to advance the activities of intellectual intuition, but refrains from dealing with the phenomenal world: it pays attention to the latter only in order to take it as a stepping stone to reach 'above form'. Mou therefore argues that in order to revive traditional Chinese thought, an interface has to be reconstructed between noumenal ontology and phenomenal ontology. This connection cannot come from anywhere other than the Chinese tradition itself, since ultimately Mou means it to be a proof that traditional Chinese thought *can also* develop modern science and technology, and only needs a new method in order to do so. This sums up the task of the 'New Confucianism'⁶³ which developed in Taiwan and Hong Kong after the Second World War, and which we discuss in Part 1 (§18). However, Mou's proposal remains an idealist one, because he considers *Xin* (心, 'heart'), or the noumenal subject, as the ultimate possibility: according to him,

62. Mou Zongsan, *Collected Works 21: Phenomenon and Thing-in-Itself* (現象與物自身) (Taipei: Student Books Co., 1975), 20–30.

63. It is necessary to distinguish *Neo-Confucianism*, a metaphysical movement that culminated during the Sung and Ming dynasties, from *New Confucianism*, which is a movement that started in the early twentieth century.

though, through self-negation it can descend so as to become a subject of (phenomenal) knowledge.⁶⁴

Part 2 of the book serves as a critique of Mou's approach, and proposes to go 'back to the technical objects themselves', as an alternative (or better, a supplement) to this idealist vision.

§4. MODERNITY, MODERNISATION, AND TECHNICITY

In attempting to think through Mou's proposition of an interface between Chinese and Western thought, while avoiding his idealism, Part 2 finds that what is central here is the relation between technics and time. Here I turn to Bernard Stiegler's reformulation of the history of Western philosophy according to the question of technicity in *Technics and Time*. But time has never been a *real* question for Chinese philosophy; as sinologists Marcel Granet and François Jullien have stated clearly, the Chinese never really elaborated on the question of time.⁶⁵ This therefore opens up the possibility, in the wake of Stiegler's work, of an investigation into the *relation* between technics and time in China.

Based on the work of Leroi-Gourhan, Husserl, and Heidegger, Stiegler attempts to put an end to a modernity characterised by *technological unconsciousness*. Technological consciousness is the consciousness of time, of one's finitude; but also of the relation between this finitude and technicity. Stiegler convincingly shows how, from Plato on, the relation between technics and anamnesis is already well established, and stands at the centre of the economy of the soul.

64. Mou himself claims that he is not an idealist, since *xin* is not the mind; it is more than the mind, and offers more possibilities.

65. F. Jullien, *Du Temps* (Paris: Biblio Essais, 2012).

After reincarnation, the soul forgets the knowledge of truth that it has acquired in the past life, and the search for truth is fundamentally an act of remembering or recollection. Socrates famously demonstrates this in the *Meno*, where the young slave, with the aid of technical tools (drawing in the sand), is able to solve geometrical problems of which he has no prior knowledge at all.

The economy of the soul in the East, though, has little in common with such an anamnestic conception of time. We must say that, even though the calendrical devices of the cultures resemble each other, in these technical objects we find not only different technical lineages, but also different interpretations of time, which configure the function and perception of these technical objects in everyday life. This is largely the result of the influence of Daoism and Buddhism, which combined with Confucianism to produce what Mou Zongsan calls the 'synthetic approach to comprehending reason [綜合的盡理之精神]' in contrast to occidental culture's 'analytic approach to comprehending reason [分解的盡理之精神]'.⁶⁶ In the noumenal experience implied by the former, there simply *is no time*; or more precisely, time and historicity do not occur as questions. In Heidegger, historicity is the hermeneutics conditioned by the finitude of Dasein and technics, which infinitises Dasein's retentive finitude by passing exteriorised memory from generation to generation. Mou appreciated Heidegger's critique of Kant in *Kant and the Problem of Metaphysics*, in which Heidegger radicalised the transcendental imagination, making it a question of time. However Mou also sees Heidegger's analysis of finitude as a limitation, since for Mou, *xin* qua noumenal subject

66. Mou Zongsan, *Collected Works 9: Philosophy of History* (歷史哲學) (Taipei: Student Books Co.), 192–200.

is that which can indeed 'infiniteise'. Mou did not formulate any material relation between technics and the *xin*, since he largely disregarded the question of technics, which, for him, is only one of the possibilities of the self-negation of the *Liangzhi* (heart/mind) (良知的自我坎陷). It is to this lack of reflection on the question of technics, I speculate, that we can attribute the failure of New Confucianism to respond to the problem of modernisation and the question of historicity; however, it is possible and necessary to transform this lack into a *positive* concept, a task akin to that undertaken by Jean-François Lyotard, as we shall examine below.

This disregarding of time and lack of any discourse on historicity in Chinese metaphysics was noted by Keiji Nishitani (1900–1990), a Japanese philosopher of the Kyoto School who studied under Heidegger in Freiburg during the 1930s. For Nishitani, Eastern philosophy did not take the concept of time seriously, and hence was unable to account for concepts such as historicity—that is, the ability to think as a 'historical being'. This question is indeed a most Heideggerian one: in the second division of *Being and Time*, the philosopher discussed the relation between individual time and the relation to *Geschichtlichkeit* (historicity). But in Nishitani's attempt to think East and West together, two problems arise, and present a dilemma. Firstly, for the Japanese philosopher, technology opens a path towards 'nihility', as do the works of Nietzsche and Heidegger; but in the Buddhism espoused by Nishitani, *śūnyatā* (emptiness) aims to transcend nihility; and in such transcendence, time loses all meaning.⁶⁷ Secondly, *Geschichtlichkeit* and, further, *Weltgeschichtlichkeit* (world

67. K. Nishitani, *Religion and Nothingness* (Berkeley: University of California Press, 1982).

historicity) are not possible without a retentional system—which, as Stiegler shows in the third volume of *Technics and Time*, is also technics.⁶⁸ This means that it is not possible to be conscious of the relation between Dasein and historicity without being conscious of the relation between Dasein and technicality—that is to say, historical consciousness demands technological consciousness.

As I argue in Part 2, modernity functions according to a technological unconsciousness, which consists of a forgetting of one's own limits, as described by Nietzsche in *The Gay Science*: 'the poor bird that has felt free and now strikes against the walls of this cage! Woe, when homesickness for the land overcomes you, as if there had been more freedom there—and there is no more "land"'.⁶⁹ This predicament arises precisely from a lack of awareness of the instruments at hand, their limits and their dangers. Modernity ends with the rise of a technological consciousness, meaning both the consciousness of the power of technology and the consciousness of the technological condition of the human. In order to tackle the questions raised by Nishitani and Mou Zongsan, it is necessary to articulate the question of time and history with that of technics, so as to open up a new terrain and to explore a thinking that bridges noumenal ontology and phenomenal ontology.

But in demanding that a Chinese philosophy of technology adopt this post-Heideggerian (Stieglerian) viewpoint, aren't we in danger of simply imposing a Western point of view once again? Not necessarily, since what is more fundamental today is

68. B. Stiegler, *Technics and Time 3: Cinematic Time and the Question of Malaise*, tr. S. Barker (Stanford: Stanford University Press, 2010).

69. F. Nietzsche, *The Gay Science*, tr. J. Nauckhoff (Cambridge: Cambridge University Press, 2001), 119.

to seek a new conception of world history and a cosmotechnical thinking that will give us a new way of being with technical objects and systems. Far from simply renouncing the analyses of Mou and Nishitani and replacing it with Stiegler's, we therefore pose the following question: Rather than absorbing technics into either of their ontologies, is it possible to understand technics as a *medium* for the two ontologies? For Nishitani, the question was: Can absolute nothingness appropriate modernity and hence construct a new world history that is not limited by Western modernity? For Mou: Can Chinese thinking absorb modern science and technology through a reconfiguration of its own thinking that already lies within the possibilities of the latter? Nishitani's answer leads to a proposal for a total war as a strategy to overcome modernity, something that was taken up as the slogan of the Kyoto school philosophers prior to the Second World War. This is what I term a metaphysical fascism, which arises from a misdiagnosis of the question of modernity, and is something we must avoid at all costs. Mou's answer was affirmative and positive even if, as we will see in Part 1, it was widely questioned by Chinese intellectuals. It seems to me that both Mou and Nishitani (as well as their schools and the epochs in which they lived) failed to overcome modernity largely because they didn't take the question of technology seriously enough. However, we still have to pass through their work in order to clarify these problems. One point that can be stated clearly here is that, in order to heal the rupture of the metaphysical system introduced by modern technology, we cannot rely on any speculative idealist thinking. Instead, it is necessary to take the materiality of technics (as *ergon*) into account. This is not a materialism in the classical sense, but one that pushes the possibility of matter to its limits.

This question is at once speculative and political. In 1986, Jean-François Lyotard, on the invitation of Bernard Stiegler, gave a seminar at IRCAM, at the Centre Pompidou in Paris, later published under the title '*Logos and Techne, or Telegraphy*'.⁷⁰ In the seminar Lyotard asked whether it is possible that, rather than being retentional devices, the new technologies might open up a new possibility of thinking what the thirteenth-century Japanese Zen Buddhist Dōgen calls the 'clear mirror [明鏡]'. Lyotard's question resonates with the analyses of Mou and Nishitani, since the 'clear mirror' fundamentally constitutes the heart of the metaphysical systems of the East. Towards the end of the talk, Lyotard concludes as follows:

The whole question is this: is the passage possible, will it be possible with, or allowed by, the new mode of inscription and memoration that characterizes the new technologies? Do they not impose syntheses, and syntheses conceived still more intimately in the soul than any earlier technology has done? But by that very fact, do they not also help to refine our anamnestic resistance? I'll stop on this vague hope, which is too dialectical to take seriously. All this remains to be thought out, tried out.⁷¹

Why did Lyotard, having made this proposal, retreat from it, suggesting that it was too vague and too dialectical to be taken seriously? Lyotard approached the question from the opposite direction to Mou Zongsan and Keiji Nishitani: he was looking for a passage from West to East. However, Lyotard's limited knowledge of the East did not allow him to go further, into the question of world historicity.

70. J.-F. Lyotard, *The Inhuman: Reflections on Time*, tr. G. Bennington and R. Bowly (London: Polity, 1991).

71. *Ibid.*, 57.

Along with many others of his time, notably Bruno Latour, Lyotard is a representative of the second attempt of European intellectuals to overcome modernity. The first attempt was around the time of the First World War, when intellectuals were conscious of the decline of the West and the crisis that was presenting itself in the domains of culture (Oswald Spengler), science (Edmund Husserl), mathematics (Hermann Weyl), physics (Albert Einstein), and mechanics (Richard von Mises). In parallel, East Asia saw the first generation of New Confucians (Xiong Shili, the teacher of Mou Zongsan, and Liang Shuming) and intellectuals such as Liang Qichao and Zhang Junmai; the very much germanised Kyoto school; and then the second generation of New Confucians in the 1970s—all of whom attempted to broach the same questions. However, like the first generation of New Confucians, they remained insensitive to their idealist approach towards modernisation, and didn't give the question of technology the properly philosophical status that it deserves. In Europe we are now witnessing a third attempt, with anthropologists such as Descola and Latour, who seek to use the event of the Anthropocene as an opportunity to overcome modernity in order to open up an ontological pluralism. In parallel, in Asia, we also see the efforts of scholars who are seeking ways to understand modernity without relying on European discourse—notably the Inter-Asia School initiated by Johnson Chang and others.⁷²

§5. WHAT IS THE 'ONTOLOGICAL TURN' FOR?

For Lyotard, the question he poses is also that of possible resistance against the reigning technological hegemony—the

72. See <<http://www.interasiaschool.org/>>.

product of occidental metaphysics. This is precisely the task of the postmodern, beyond its aesthetic expressions. Certain other thinkers such as Latour and Descola, who eschew the postmodern, are instead drawn to the 'non-modern' in order to address this task. However, no matter what we call it, Lyotard's question deserves to be taken up seriously once more. And as we shall see, this question converges with the inquiries of Nishitani, Mou, Stiegler, and Heidegger. If an anthropology of nature is possible and necessary in order to elaborate on non-modern modes of thinking, then the same operation is possible for technics. It is on this point that we can and must engage with contemporary European thought concerning the programme of overcoming modernity, as clearly and symptomatically exemplified, for instance, in the recent work of French philosopher Pierre Montebello, *Cosmomorphic Metaphysics: The End of the Human World*.⁷³

Montebello attempts to show how the search for a post-Kantian metaphysics, hand-in-hand with the 'ontological turn' in contemporary anthropology, can lead us—Europeans, at least—out of the trap that modernity has set for us. Kant's metaphysics, as Montebello puts it, is based on limits. Kant already warned readers of the *Critique of Pure Reason* about the *Schwärmerei* or 'fanaticism' of speculative reason, and attempted to draw the boundaries of pure reason. For Kant, the term 'critique' doesn't carry a negative signification, but rather a positive one, namely that of exposing the conditions of possibility of the subject in question—the limits within which the subject can experience.

73. P. Montebello, *Métaphysiques cosmomorphes, la fin du monde humain* (Dijon: Les presses du réel, 2015).

This setting of limits appears again when we consider Kant's division between phenomenon and noumenon, and his refusal to consider human beings capable of intellectual intuition, or intuition of the thing-in-itself.⁷⁴ For Kant, human beings only have sensible intuitions corresponding to phenomena. Montebello's formulation of the becoming of post-Kantian metaphysics, as exemplified in the thought of Whitehead, Deleuze, Tarde, and Latour, hinges on the attempt to overcome such a metaphysics of limits, and therefore proposes a necessary infinitisation. The political danger of the Kantian legacy is that human beings become more and more detached from the world, a process formulated by Bruno Latour as follows: 'Things-in-themselves become inaccessible while, symmetrically, the transcendental subject becomes infinitely remote from the world.'⁷⁵ Mou Zongsan's critique of Kant accords in this respect with Montebello's, though Mou proposes a different way to think about infinitisation—namely, through the reinvention of Kantian intellectual intuition in terms drawn from Chinese philosophy.

Montebello proposes that the work of Quentin Meillassoux stands out as a challenge to the limit of modernity (here a synonym for the Kantian legacy of a metaphysics of limits). One central feature of the latter that Meillassoux calls into question is what he calls 'correlationism'—the stipulation that any object of knowledge can only be thought in relation to the conditions according to which it is manifested to a subject. This paradigm, according to Meillassoux, has been predominant in

74. Ibid., 21.

75. B. Latour, *We have Never Been Modern* (Cambridge MA: Harvard University Press, 1993), 56; cited by Montebello, *Métaphysiques cosmomorphes*, 105.

Western philosophy for more than two centuries, for example in German Idealism and phenomenology. Meillassoux's question is simply this: How far can reason reach? Can reason accede to a temporality where it itself ceases to be, for example in thinking objects belonging to an ancestral era prior to the appearance of humanity?⁷⁶ Although Montebello acknowledges Meillassoux's work, at the same time he strategically portrays Meillassoux and Alain Badiou as representatives of a failed attempt to escape finitude that relies on the 'mathematical infinite'. When Montebello says 'mathematics' here, he means numerical reduction; and he jointly condemns both mathematics (in this sense) and correlationism:

The monster with two heads simultaneously affirms a world without man, mathematical, glacial, desert, unlivable, and man without world, haunting, spectral, pure spirit. Mathematics and correlation, far from opposing each other, marry each other in funereal weddings.⁷⁷

It is not our task here to examine Montebello's verdict against Badiou and Meillassoux. What interests us is the solution he proposes, which consists in affirming instead 'the multiplicity of relations that situate us in the world'.⁷⁸ We can understand this as a resistance against a thinking based on mathematical rationality, and which takes into consideration the history of cosmology, which we can analyse in terms of the progress of geometry in its departure from myth and its ultimate

76. Q. Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, tr. R. Brassier (London: Continuum, 2009).

77. *Ibid.*, 69.

78. *Ibid.*, 55.

completion in astronomy. It seems to me that this type of relational thinking is emerging in Europe as a replacement for a substantialist thinking that has survived since antiquity. This is evident in the so-called 'ontological turn' in anthropology—for example in Descola's analysis of the ecology of relations—as well as in philosophy, where Whitehead and Simondon's anti-substantialist relational thinking is gaining more and more attention. Here the concept of relation dissolves the concept of substance, which becomes a unity of relations. These relations constantly weave with each other to construct the web of the world as well as our relations with other beings. Such a multiplicity of relations can be found in many non-European cultures, as demonstrated in the works of anthropologists such as Descola, Viveiros de Castro, Ingold, and others. In these multiplicities of relations, one finds new forms of participation according to different cosmologies, and in this sense Montebello proposes to think about *cosmomorphosis* rather than anthropomorphosis—to think beyond the *anthropos* and to reconfigure our practices according to the *cosmos*. Naturalism, as we have seen above, is only one such cosmology alongside others such as animism, analogism, totemism, and what Viveiros de Castro calls 'perspectivism', meaning the exchange of perspectives between human and animals (where, for example, the peccary sees itself as hunter, and vice versa). Viveiros de Castro uses Deleuze and Guattari's concept of intensity to describe a new form of participation, 'becoming-others', which sheds light on the possibilities of a post-structural anthropology. The importance of Viveiros de Castro's contribution is that he introduces a new way to do anthropology that is not confined to the legacy of Lévi-Straussian structuralism. To his eyes, if Western relativism (e.g. the recognition of multiple ontologies) implies a multiculturalism

as public politics, then Amerindian perspectivism can give us a multinaturalism as cosmic politics.⁷⁹ Unlike naturalism, these other forms of cosmology operate according to continuities (e.g. intensities, becoming) rather than discontinuities between culture and nature. For the same reasons, I propose to investigate technological thinking in China without adopting the structuralist anthropological approach fashioned by sinologists such as A.C. Graham and B.I. Schwartz.

Montebello argues that a return to a more profound philosophy of nature is able to overcome the Anthropocene—the symbol of modernity—by bringing back a new way of *being together* and *being with*. Such a concept of nature is one that would resist the division between culture and nature found in naturalism. Now, the examples Montebello borrows from Descola and Viveiros de Castro resonate strongly with the concept of *Dao*, as a cosmological and moral principle which, as I discuss below, is based on the resonance between (and the unification of) the human and the Heaven. The Chinese cosmology, based on this resonance, is ultimately a moral cosmology—it is this cosmological view that defines the interaction between humans and the world, in terms of both natural resources and cultural practices (family hierarchy, social and political order, public policies, and human/non-human relations). Indeed, in the work of Descola one finds occasional references to Chinese culture, which seem to originate in the work of Jullien and Granet. Reading Granet, for example, Descola finds that during the European Renaissance, analogism rather than naturalism was the dominant ontology.⁸⁰ Naturalism,

79. E. V. de Castro, *Cannibal Metaphysics: For a Post-Structural Anthropology*, tr. P. Skafish (Minneapolis: Univocal Publishing, 2014), 66.

80. Descola, *Beyond Nature and Culture*, 206–7.

in this sense, is only a product of modernity; it is 'fragile' and 'lacking in ancient roots'.⁸¹

Yet I am sceptical that this kind of return to or reinvention of the concept of 'nature', or a return to some archaic cosmology, is sufficient to overcome modernity. This scepticism is both epistemological and political. Montebello mobilises Simondon to show that nature is the 'pre-individual', and that it is therefore the foundation of all forms of individuation. It is true that Simondon speaks of

[t]his pre-individual reality that the individual carries within it [and which] could be named nature, thereby rediscovering in the word "nature" the meaning that the pre-Socratic philosophers gave it [...] Nature is not the opposite of man, but the first phase of being, the second phase being the opposition of the individual and the milieu.⁸²

But what is 'nature' for Simondon? As I have shown elsewhere,⁸³ the existence of two separate currents of reception of Simondon—as philosopher of nature, and as philosopher of technology, based respectively on his two theses *L'individuation à la lumière des notions de forme et d'information* and *Du mode d'existence des objets techniques*—remains problematic, since what Simondon in fact sought to do was to overcome the discontinuities between nature, culture, and technics. What is in question here is not just the interpretation of Simondon, but rather this 'nature'

81. Ibid., 205.

82. Simondon, *L'individuation à la lumière des notions de forme et d'information* (Grenoble: Jérôme Millon, 2005), 297.

83. Yuk Hui, *On the Existence of Digital Objects* (Minneapolis: University of Minnesota Press, 2016).

itself; and the tension between 'nature' and the global technological condition will not disappear just because of a narrative of the 'ontological turn'.

This observation brings us to the global techno-political dimension that I would like to add to this discourse. It is understandable that a European philosopher might believe that, once Europe manages to distance itself from modernity, then other cultures will be able to resume their interrupted cosmologies; and that therefore, in opening up European thought to other ontologies, he also saves the Other from its subjection to Western technological thinking. But there is a blind spot at work here: when Montebello and others recognise that European naturalism is a rare and perhaps exceptional case, they don't seem to take account of the extent to which this view has pervaded other cultures through modern technology and colonisation. Those cultures which, over the past century, have had to contend with European colonisation, have already undergone great changes and transformations, to the extent that the global technological condition has become their own destiny. Given this 'reversal' in perspectives, any 'return to nature' is questionable at best.

This book would like to offer another standpoint, using China as an example to describe the 'other side' of modernity, and hopefully providing some insights into the current programme of 'overcoming modernity' or 'resetting modernity' in the era of digitalisation and the Anthropocene. To return to ancient categories and invoke the concept of cosmotechnics is by no means to return to them as 'truth' or as 'explanation'. The scientific knowledge of today confirms that many of the ancient modes of thought are replete with misconceptions, and on this basis a certain scientism may even refuse any consideration of the question of Being and the question of *Dao* alike.

However it should be restated that, through the trajectory that this book will outline, I seek to reinvent a *cosmotechnics*, and not just to return to belief in a cosmology. Neither do I seek a return to nature, in the sense that many read Ionian philosophy or Daoist philosophy as a philosophy of nature—but rather to reconcile technics and nature, as Simondon proposed in his thesis on the genesis of technicity.

§6. SOME NOTES ON METHOD

Before embarking upon our inquiry, a few words should be added concerning its method. Although I attempt to outline the historical transformations of the *Qi-Dao* relation, I am aware that its complexity is far beyond the simple sketch that I can offer here, since it is impossible to exhaust this dynamic in such a modest essay. The generalizations and unconventional readings that this book is obliged to carry out have to be recognized for their limits and prejudices, but there is no way to carry out such a project without working through them. Nevertheless, I hope that what I set out below will be of inspiration to scholars who might want to address the question of technology from both European and non-European perspectives—something that I believe is becoming increasingly necessary.

Rather than presenting a formal method, I would like to explain three things that I seek to *avoid*: Firstly, a symmetry of concepts, where one starts with corresponding concepts in European philosophy and Chinese philosophy—for example, identifying the equivalents of *technē* and *physis* in Chinese culture. It is true that, after decades of progress in translation and cultural communication, the terms of Western philosophy can find more or less corresponding translations in the Chinese language. But it is dangerous to take these as symmetrical relations.

For the search for symmetry will end up obliging us to use the same concepts, or more precisely, to subsume two forms of knowledge and practice under predefined concepts. To start with, asymmetry also means an affirmation of difference—but not a difference without relation (e.g. mirror images, reflections, mirages)—and to seek a convergence conditioned by this difference. Hence, in my inquiry into the question of technics in China, even if I use the word *technics*, readers should be aware of the linguistic constraints, and must be prepared to open themselves to a different cosmological and metaphysical system. For these reasons, I do not use the usual translation of *technē* as *Gong* (工, 'work') or *Ji* (技, 'skill'), which would turn our inquiries into mere empirical examples; but rather start with a systematic view of *Qi* (器) and *Dao* (道), terms which, in turn, cannot be reduced to product (*ergon*) and soul (*psychē*). This asymmetry is presupposed and methodologically mobilised in this book. Readers may find that on occasion I try to draw out similarities, but only so as to render visible the underlying asymmetry.

The same thing goes for translating doctrines such as dualism and materialism. For example, it would be incorrect to understand *Yin-Yang* as a dualism in the same sense that we use this term in Europe. The latter generally refers to two opposing and discontinuous entities: mind-body, culture-nature, being-nothingness. This form of dualism is not dominant in China, and *Yin-Yang* are not conceived of as two discontinuous entities. Hence in Chinese metaphysics there is virtually no problem in recognizing that being comes from nothingness, as is already stated in the Daoist classics. In Europe, *ex nihilo* creation is the reserve of a divine power, since it is scientifically impossible: *ex nihilo nihil fit*. It was not until Leibniz posed the question 'Why is there something instead of nothing?', later

taken up by Heidegger to explicate the meaning of Being, that the question of Being would be further clarified in Western philosophy. In more general terms, Chinese thinking tends to be concerned more with continuity and less with discontinuity. This continuity is constructed by relations, as found, for example, in resonances between the Heaven and the human, musical instruments, or the moon and flowers. As mentioned above, this is often referred to as 'correlative thinking'.⁸⁴ However, this discourse is developed by Granet and later by A.C. Graham, who make use of structuralist anthropology to formulate the two corresponding entities as oppositions, for example *Yin-Yang*. I prefer to call it a 'relational' rather than 'correlative' thinking, because the correlative thinking described by the above mentioned sinologists inspired by structuralist anthropology is always mobilised in an attempt to systematise, in order finally to present static structures.⁸⁵ This relational thinking is in fact more open than this might suggest, since it is more dynamic. It does indeed include a correlative mode of association, meaning that one natural phenomenon can be related to the other according to shared common categories in the cosmology—for example, the *Wu Xing* ('five phrases', or 'five movements'). But it can also be political, in the sense that there is a correlation between seasonal change (as the expression of the will of the Heaven) and the policy of the state—for example, one should avoid executing criminals in the springtime. Finally, it can also be subtle and poetic, in the sense

84. See Graham, *Yin Yang and the Nature of Correlation*, Chapter 2.

85. Readers interested in how a structuralist reading is performed can refer to B.I. Schwartz, *The World of Thought in Ancient China* (Cambridge, MA: Harvard University Press, 1985), Chapter 9: 'Correlative Cosmology: The "school of Yin and Yang"', where Schwartz analyses the school using a method similar to Lévi-Strauss's primitive 'science of the concrete'.

that the heart is able to detect this subtle resonance between natural phenomena in order to reach the *Dao*—something that is especially true in the Xin school of Neo-Confucianism.

Secondly, I avoid setting out from isolated concepts as if they were static categories—a method practiced by many sinologists, but which seems to me rather problematic, because it also unconsciously imposes a sort of cultural essentialism. Concepts can never exist independently: a concept exists in relation to other concepts; moreover, concepts are transformed over time, either in themselves or in relation to a broader system of concepts. This is especially so in Chinese thinking—which, as we have said, is fundamentally a relational thinking. Therefore, instead of comparing two concepts, I try to take a systematic view and to open up the possibility of locating a *genealogy* of the concept within the system. As we shall see, when we focus on the relation between *Dao* and *Qi*, we must consider both their historical separation and their reunification as the lineage through which we can project a philosophy of technology in China. I hope that the case of China can serve as an example to illustrate this difference, and hence contribute toward a pluralism of technicity.

Thirdly, I would like to distance this work from postcolonial critiques. This is not at all to say that postcolonial theory is not taken into account here, but rather that I aim to provide a supplement that makes up for what postcolonial theory tends to disregard. The strength of postcolonial theory, it seems to me, is that it effectively reformulates the question of power dynamics as narratives, and consequently argues for other, or different, narratives. However, this might also be regarded as one of its weaknesses, since it tends to ignore the question of technology—a question which, I would argue, cannot be reduced to one of narratives. Indeed, it is dangerous

to try to operate such a reduction, since doing so involves acknowledging the material conditions without understanding the material significance of these conditions—just as *Qi* was considered to be inessential to *Dao* during the social and political reform in China after the Qing dynasty (see §14). Thus the approach adopted here departs from that of postcolonial critique in order to advance towards a materialist critique. This materialism is not one that opposes spirit and matter, though; rather, it aims to foreground material practice and material construction in order to attain a cosmological and historical understanding of the relation between the traditional and the modern, the local and the global, the Orient and the Occident.