

Machine Decision Is Not Final

China and the History and Future of Artificial Intelligence

Edited by

Benjamin Bratton

Anna Greenspan

Amy Ireland

Bogna Konior

Blaise Agüera y Arcas

Bo An

Benjamin Bratton

Chen Qiufan

Gabriele de Seta

Shuang L. Frost

Vincent Garton

Steve Goodman

Yvette Granata

Anna Greenspan

Amy Ireland

Bogna Konior

机器决策 并非 终局

中国与 人工智能 的历史 及 未来

Vincent Lê

Lawrence Lek

Lukáš Likavčan

Suzanne Livingston

Iris Long

Bingchun Meng

Reza Negarestani

Wang Hongzhe

Regina Kanyu Wang

Xin Wang

Xia Jia

You Mi

Machine Decision Is Not Final

China and the
History and
Future of
Artificial
Intelligence

Edited by
Benjamin Bratton
Anna Greenspan
Amy Ireland
Bogna Konior

机器决策
并非
终局

中国与
人工智能
的历史
及
未来



Published in 2025 by Urbanomic Media Ltd,
The Old Lemonade Factory,
Windsor Quarry,
Falmouth TR11 3EX
United Kingdom



Publication of this volume was supported by Research Center for Artificial Intelligence and Culture, NYU Shanghai.

© Urbanomic Media Ltd.
All rights reserved.

No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or any other information storage or retrieval system, without prior permission in writing from the publisher.

British Library cataloguing-in-publication data
A full catalogue record of this book is available from the British Library
ISBN (Print Edition) 978-1-913029-99-9
Distributed by the MIT Press, Cambridge, Massachusetts and London,
England

www.urbanomic.com

d_r0

Anna Greenspan and Bogna Konior

Introduction: Fleeting Forces and Clever Machinations

I've heard my teacher say, 'Where there are clever machines, there will necessarily be clever machinations, and where there are clever machinations, there will necessarily be mechanical hearts and minds.' Once the mechanical heart is lodged in your breast, purity and simplicity are no longer complete in you. When purity and simplicity are no longer complete, the imponderable spirit and life in you become unsettled. When the spirit and life in you are unsettled the Way cannot be carried by them. It's not that I don't know about this thing, it's that I would be ashamed to use it.

ZHUANGZI¹

Unless the whole universe is in the process of fusion and intermingling like fleeting forces moving in all directions, it may not be called The Great Harmony.

ZHANG ZAI²

From at least as early as the Warring States Period (475–221 BCE) Chinese philosophy has been concerned with the question of machines. The great intellectual flourishing of ‘a hundred schools of thought’ during this period coincided with widespread social and technological change. Descriptions of imaginary self-driving carriages, clever mechanical birds sent out to spy on enemies, and other fantastical contraptions provoked worries about destruction beyond human control in an epoch already marred by war.³ Early Confucian and Daoist thinkers vigorously debated the nature of artifice. Is following and imitating nature the only right path? What is the role of creative innovation? Are technological developments inherently disruptive to the maintenance of social relations and the work of retaining a harmonious relationship between human beings and the cosmic order?⁴ Or might the ever-changing *Dao* (道), or Way, be entirely consistent with the evolution of machines? Attitudes to technology dating from this pre-modern period range widely and, despite their remoteness in time, mirror recurrent concerns found, for example, at the dawn of the Industrial Revolution in Europe. Today, they resonate acutely with the concerns of the present, as artificial intelligence reaches a critical juncture, moving out of the laboratory and into the fabric of everyday life. Inside and outside of China,

two major questions return cyclically, as if proper to any period of technological upheaval. First, what is a machine? Is it part of cosmic logic and the way of nature, or does it stand outside of them? Does it belong among the ‘ten thousand things’ of the *Zhuangzi* that all share in the *Dao*, or is it an artificial abomination, a fundamental discontinuity or rupture in the cosmic continuity linking heavens, earth, and humans—*tiandiren* (天地人)?² Second, is there a capacity for decision or an agency proper to a machine? Is a machine simply a tool for humans to use, or does it have its own way of acting that is irreducible to human designs? Can it be tamed, or is it inherently threatening to human civilisation? Does technology necessarily reflect human goals, or does it channel a purpose beyond human dominion? Is there a machinic will that does not simply follow the will of its user? Is technology under our control or, alternatively, are we controlled by our technologies? In this book we also want to ask whether China’s philosophical and historical engagement with these questions sheds light on the destiny of machines in human history as such—outside the confines of any particular culture or territory. We do not wish to distil a single ‘Chinese’ philosophy of artificial intelligence or determine which form of thought most accurately captures China’s present, past, or future. We do not aspire to ‘represent’ or ‘explain’ China. Rather, our contention is both simple and obvious: one cannot properly tune into the currents of machine intelligence flowing across the planet if one remains confined within a single geographical perspective.

That certain concerns about technology are, for lack of a better word, universal, should be evident to any historian. Early Daoists cautioned against technologies that sully the spirit and ignite chaos. The *Zhuangzi* warns against the use of ‘clever machines’ and suggests that they are better left alone by those walking the righteous path.⁶ This is not unlike the apprehension that many European intellectuals harboured toward the technologies of their respective times, whether that be the early widespread resistance in Western Europe to Hindu-Arab numerals, the reluctance of the Catholic Church to embrace perspectival painting and scientific method in the early Renaissance, or the anxiety that swept over the European continent during the introduction of photography, the film camera, the microscope, and the steam engine.⁷ ‘To try to capture fleeting images is not just an impossible undertaking, the very wish to do such a thing is blasphemous’, reads a nineteenth-century German critique of early daguerreotype

technology. ‘Man is made in the image of God, and God’s image cannot be captured by any machine.’⁸ Yet admonition and derision are far from being the only reactions. Humanity’s enthusiastic embrace of technology, which is so patent in practice, can also be found in the realm of ideas.

In China, Mohists took an artisan position, forcefully arguing against the Confucian ideal to transmit rather than create.⁹ The Neo-Confucian Shen Kuo (1031–1095), whose *Brush Talks from Dream Brook* documents scientific innovations in physics, astrology, mathematics, and medicine, claimed that there was no contradiction between Confucius’s teachings and technology.¹⁰ Despite the apparent Daoist rejection of machines, there is arguably a Daoist attitude that views the emergence of technology as consistent with the Way. The ideal of *wuwei* (无为, effortless action) is commonly illustrated by the famous story of Cook Ding, who learned to follow the hollows and openings of an animal’s body and effortlessly wielded his knife to carve an ox.¹¹ Such ‘effortless action’ is arguably aligned with bottom-up trends in machine learning and recent discoveries in neuroscience regarding the spontaneous intelligence of nonconscious cognition.¹² Perhaps the most significant contribution to any ‘pro-machine’ tendency in Chinese thought, however, comes from the profound influence of Buddhism. Buddhist culture and ideas, which spread across Asia through the trade routes and communication networks of an early urban cosmopolitanism, have long had a deep affinity with technoculture.¹³ Buddhists were amongst the first adopters of print technology, and have since then actively incorporated a wide range of ‘technologies of salvation’ including photographs, WeChat dharmas, smartphone rituals, and robot monks.¹⁴ Buddhist modernity made a deep impact on thinkers such as Tan Sitong who saw in the emerging world of electromagnetic communication an expression of New Confucian philosophy.¹⁵

These traditions are occasionally called upon to justify why China, according to some studies, scores high on the social acceptance of robotics and low on AI fear.¹⁶ To explain why ‘China does not fear AI’, for example, Bing Song draws upon schools of thought whose early practitioners often rebuked machines; she writes that ‘notions of living with other intelligent beings, most of which are more powerful and long-lasting than humans, abound in Daoist and Buddhist thinking’.¹⁷ Indeed, the Mahayana conception that even non-sentient beings have Buddha Nature seems to resonate with the possibility of ‘artificial’ intelligences. Gai Fei points out

that, contrary to a perceived organic prejudice amongst Daoists, practitioners of inner alchemy actively rejected a plant-based diet in favour of ingesting more durable materials such as crystals and metals.¹⁸ In their quest for immortality, they sought to create a metallic body, enacting a kind of proto-cyborgian becoming. Confucianism has also been called upon to accommodate artificial intelligence: contemporary philosophers such as Li Chenyang and Yao Zhongqiu argue that, rather than threatening harmonious human social order, AIs may belong within the Confucian ethic of ‘graded love’ and be counted among the creatures (*wu*, 物) with which we partake in friendly and mutually beneficial relationships.¹⁹ Likewise, Stephan Angle proposes that the capacity to program software, which can encourage certain virtues, suggests that the ubiquity of AI may be of use in constructing a society with Confucian values.²⁰

Yet attitudes and narratives around artificial intelligence both inside and outside of China are ambivalent and contradictory. Arguments suggesting an inherent sympathy between AI and traditional Chinese philosophy can easily serve national business interests and bolster geopolitical aspirations. A few years ago, China ‘plunged into an artificial intelligence fever’, as enthusiastically described by the well-known executive and investor, Kai-Fu Lee.²¹ In 2016, more than 280 million Chinese viewers tuned in to watch Google’s AlphaGo defeat Lee Sedol in the ancient game of Go. In 2018, the bookshelves behind President Xi Jinping in his New Year speech displayed two AI-related publications, Pedro Domingos’s *The Master Algorithm* and Brett King’s *Augmented: Life in the Smart Lane*, and Xinhua News Agency unveiled its new AI anchors, Qiu Hao and Xin Xiaomeng.²² There are hopes amongst both government officials and corporate leaders that AI and robotics can finally resolve the flaws of a centralised planned economy.²³ For some, the future of the party lies, ultimately, in the realisation of a ‘fully automated luxury communism’²⁴ with Chinese characteristics. Yet, despite a government declaration that China would become a leading AI power by 2030 and the optimistic prognosis of entrepreneurs such as Lee, and even accounting for disruptive breakthroughs from China, it is still in America that the most advanced, cutting-edge research takes place, and it is still American technoculture that reigns supreme in the popular imagination.

There is a common accusation that China—even at its most inventive—ultimately only copies innovations from elsewhere. This corresponds to a long-held argument that technoscientific advances in China are embedded

in the ideology of ‘scientism’, which took root during the May 4th period and advocated for the rejection of Chinese traditions in favour of a wholesale adoption of what were deemed to be more progressive ‘Western’ ideas. As Shiping Hua writes, the doctrine of scientism implies that science is unified; has no limits; has been extremely successful at prediction, explanation and control; confers objectivity, and is beneficial as a whole.²⁵ Although the relationship between science as a way of knowing the world and technology in its multiple functions is not so obvious, ‘science and technology’ can serve as relatively uncontroversial ideals to rally behind, and are easily tied into the narrative of economic and civilisational progress. These competing conceptions of the relationship between culture, philosophy, and technology are actively debated as ‘Chinese intellectuals [struggle] to fill an intellectual vacuum created by the failure of the Cultural Revolution [and] the subsequent gradual loss of influence of Marxism as a whole, and to re-vision a polity for China’.²⁶

It is true that one of the most common responses in China to technologies such as doorways and vending machines that operate by facial recognition is to remark upon their convenience,²⁷ an overly simplistic techno-optimistic narrative obscures the fact that Chinese citizens are as conscious and weary of the ethical and political problems of AI as their counterparts elsewhere in the world. Algorithmic control of the cityscape is a widespread concern, while ‘algorithmic bias, discriminative uses, responsibility and legal issues’ as well as ‘concerns over job displacements caused by AI’, ‘rising inequality’, and ‘the loss of autonomy’ are repeatedly discussed on WeChat and Zhihu.²⁸ Predictably, as Jinghan Zeng notes, objections to AI may be attributed to the lack of legal recourse to methods of resisting surveillance. There is also substantial concern that, owing to its demographics and stage of economic development, AI’s transformation of the workforce may prove particularly challenging in China.²⁹

Finally, a positive narrative of AI as an extension of ancient Chinese wisdom or a carrier of civilisational progress stands in contrast to more recent government policy. Although Chinese military and industrial sectors are still prioritising AI,³⁰ economic and data privacy concerns, as well as the Chinese state’s larger desire to construct an oppositional ‘non-Western’ identity, means that American software, including generative AI, is as of now prohibited and requires a VPN to access. And while Chinese AI

models are proliferating, these are subject to strict censorship and risk being blocked by uncertain regulation.³¹

Mapping connections between Chinese thought and the question of the machine consequently reveals an adjacent area of investigation: What is the relationship between technologies and the territories whence they originate and in which they are used? Are particular technologies tied to specific cultures or cosmologies? Is technological development historically and culturally contingent? Can certain machines only emerge in specific times and places, under specific cultural conditions? To state it most broadly, what is the relationship between ‘culture’ and ‘technology’? On one hand, the answers to these questions would seem straightforward. Isn’t technology simply a subset of culture? And yet, if this were the case, shouldn’t there be as much technological diversity as there is cultural diversity? Does the apparent lack of diversity suggest that the trajectory of technological development is universal or, on the contrary, does modern technocapitalism bear the unique characteristics of ‘Western culture’ imposed the world over such that, as thinkers such as Weber and Marx predicted, ‘modernisation’ is always essentially ‘Westernisation’? Alternatively, is technology itself created from older layers of cultural exchange, impossible to pin to one territory or another?

This latter line of thought, that technologies emerge out of networks of cultural exchange, is supported by the influence of the cross-cultural transmission of the *Yijing*, or *The Book of Changes*, on the history of computation. This ancient compendium, which can be read as a cosmological treatise, an early scientific theory pertaining to natural laws, a book of advice and wise sayings, and a manual for divination, was first introduced to Europe by the Jesuits in the early modern period. It was of particular interest to polymath philosopher Gottfried Leibniz who held that the discovery of binary arithmetic could be found in the numeracy of the *Yijing*’s hexagrams and used it as inspiration for his early calculating machines.³² In addition to its transmutations into binary code in industrialising Europe, the *Yijing* sits at the cusp between prophecy and prediction and is thus foundational to the history of digital computation. Notwithstanding these intersecting histories of technological cultures, the problem of the exact relationship between technology and territory continues to animate philosophy.

Since the Industrial Revolution, there has existed a definition of technology as a realm supposedly purged of cosmology, and related instead to a secular global modernity. In *The Question Concerning Technology in China: An Essay in Cosmotronics*, Yuk Hui argues that we suffer from a lack of technodiversity which can only be countered by isolating the exact ontology of ‘Western technology’ as well as producing a completely distinct one based in Chinese philosophy, or other ‘non-Western’ philosophies.³³ The idea of technology prevalent in the West from ancient Greek thought until now, he argues, was identified by Heidegger: the use of tools to mould the world into forms suitable to human goals, needs, and designs. The dominance of this idea alongside occidental ‘Promethean’ modernity and colonialism is such that it has become nearly impossible to even imagine the ‘question of technology’ differently. This is not a simple cultural difference, but rather a metaphysical one, implying a very specific relationship between humans and the cosmos, where the world is a ‘standing reserve’ for human use, and *techne* is understood simply as a set of devices through which humans shape the world in accordance with their needs and desires.³⁴ This fundamental homogenisation of technology, Hui argues, can only be challenged by a completely distinct cosmological and technical practice, or ‘cosmotronics’, that emerges outside the philosophical culture of the West. ‘In the West’, he writes, ‘there is no longer the concept of cosmotronics because there is no longer cosmology but only astrophysics’. The question of technology in China, Hui goes on to suggest, which is based on the concepts *qi* (器, tools) and *Dao* (道, [the] Way), may still give rise to a truly alternative technoculture that is expressive of the Way and capable of uniting heavens, earth, and humans.³⁵

Hui is not alone in his desire to conceive of alternative technocultures, yet other than the example of Chinese medicine,³⁶ which is rooted in a particular understanding of the body and its expressive capacities,³⁷ it is difficult to imagine concrete examples of what these other technologies might be. You Mi offers a provocative example in her analysis of Liu Cixin’s science fiction novel *The Wandering Earth*, in which the Earth in its entirety is turned into a spaceship. In contrast to the common notion of a spaceship as a tool for leaving the Earth in order to colonise other planets, she writes that ‘every Chinese audience can relate this to the idea of 安土重迁 (*antu chong qian*), meaning [...] attachment to one’s homeland to the point of unwillingness to leave it behind, a deeply internalized idea thanks to the

traditional Confucian and agrarian social order’.³⁸ Similarly, in their projects *How to Eat and Code in Chinese: Sinofuturist Recipes* (2019) and *How to Feed an AI* (2020), Xiaowei R. Wang speculates about types of automation and intelligence that do not privilege the brain but, drawing on Chinese medicine and culinary culture, the nourishment of the senses.³⁹ Departing from the argument that Chinese medicine presents a distributed and decentralised sensory model in which eleven organs are holistically involved in circulating intelligence throughout the body, Wang imagines a scenario where a team of Chinese scientists at Alibaba AI ‘started from Chinese theories of the body, Chinese medicine, and Buddhist thought [...] to create a pretrained neural network with electrical inputs and outputs from a combination of artificial and human organs’, a hybrid machine that does not need to ingest data.⁴⁰ Still another example can be found in Lawrence Lek’s artworks: *Geomancer* (2017) envisions an AI that reaches enlightenment through its exposure to Buddhist chants and Daoist philosophy, while *Black Cloud* (2021) and *NOX* (2023–2024) portray a smart city in the near future, where it is not certain whether machine intelligence is a question of consciousness or legal liability, uniting cosmological and bureaucratic trajectories of thought.⁴¹

These varied speculations at times recollect the history of AI in China, which, whilst deeply connected with global developments, is also riddled with tangents that follow their own singular path. Thomas Mullaney argues that adapting the Chinese writing system, with its thousands of unique characters, to modern media such as the telegraph, typewriters, and digital computers, involved novel innovations in human-machine interaction that prefigured predictive text. This process of conversion, especially between Chinese characters and the alphanumeric of the Qwerty keyboard, requires a fundamental arbitrariness and hypermediation which, Mullaney contends, results in a new form of writing he calls ‘hypography’ which, he believes, is profoundly attuned to the real, underlying ‘plasticity, of all humanmachine interaction’.⁴² Meanwhile, as Xiao Liu documents, China joined the ‘information craze’—synonymous with breakthroughs in both Japan and the US in so-called ‘expert systems’—in the 1980s, when the country was steeped in ‘qigong fever’—*qigong re* (气功热).⁴³ The prospect of connecting computation with *qi*-based cosmology mobilised some of China’s greatest minds, including Qian Xuesen, whose singular vision for the future of computation was based on a synthesis of somatic and technical

sciences. Another intellectual who challenged the correlation between computation and universalism was the Chinese-American logician Hao Wang. In the 1950s, he drew upon Eastern Marxism and Western analytic philosophy to critique the then conventional view of cognitive processes as mechanical computation, arguing instead that human reasoning is personal and influenced by historical and material conditions rather than universal rules.⁴⁴ More recently, Midjourney founder David Holz, when describing his experience with DeepSeek, noted that, compared to Western models, it excelled in Chinese philosophy and literature while retaining strong English language capabilities. He speculated that this is thanks to China's well-preserved literary history in contrast to that of the West, which has lost many of its ancient texts. R1, he added, has a different philosophical foundation, potentially opening unique paths for AI self-actualisation.⁴⁵ It is still unclear, however, whether these alternative histories and poetic interventions translate into a real, concrete diversity in AI. Rather, at least for the time being, gestures toward Chinese cosmology often seem to function as little more than rhetorical dressing on accounts of all-too-familiar technologies. For example, Alibaba's Aspara databases, named after the ethereal Buddhist nymph, store a wealth of information necessary for the company's proposed project ET Agricultural Brain in which millions of pigs are optimised and produced at a low price, while farmers become managers or administrators.⁴⁶

Cases such as these may suggest that it is not Confucianism, Buddhism, or Daoism, but rather China's long tradition of legalism and respect for bureaucracy that underlies its engagement with AI. It might even be argued that 'digital technology in contemporary China emerged from the need to rebuild a new form of bureaucracy'.⁴⁷ If seen in isolation, China's enthusiasm for technocratic bureaucracy supports the popular image of Chinese technology as focused on control and synchronisation, whether that takes the form of a 'techno-surveillance state' or the legacy of communism's insistence on the 'mass'.⁴⁸ In the worst cases, as Benjamin Bratton notes in this volume's afterword, when seen from outside China, these narratives recast the country's inhabitants as robots in a technodystopian reimagining of 'the yellow horde', where Sinophobia and technophobia converge into a general fear of the future pictured as 'an emotionless mode of total computational control, with distinctly Asian characteristics' soon to replace 'humanity'.⁴⁹ From efficient infrastructure

development and smoothly-run biometric cities to choreographed dancing robots and its response to COVID-19, China has been both admired and scorned for its aptitude for technological coordination in the service of an ‘authoritarian resilience’.⁵⁰ In the period immediately after the pandemic, the idea that ‘acceleration is both an addiction and necessity for the Shenzhen model’ was severely questioned.⁵¹ The ‘Sinofuturist’ proclamation that ‘neo-China arrives from the future’⁵² as a designation of a different world order to come coexisted with a post-pandemic malaise that has been dubbed ‘Sino-no-futurism’ and ‘Sinopessimism’.⁵³ The mood was also sour in online youth subcultures, as indicated by the take-off in early 2021 of *tangping* (躺平)—the doctrine of ‘lying flat’⁵⁴—or a video posted on Weixin in May 2022 in which a young couple face off against a trio of *dabai* (大白), or ‘big whites’ (workers clad in white hazmat suits enforcing the government’s Zero Covid policy). In response to the couple’s refusal to be taken to a quarantine centre, one of the *dabai* threatens them with punishment for being a menace to public security, adding ominously that it will affect ‘the next three generations’ of their family. The young couple’s nihilistic response, uttered calmly before politely closing the door, saw the video go viral: ‘Thanks, but we are the last generation.’⁵⁵ Yet, despite the growing power of the state, many of the essays in our book attempt to think AI in terms that are not just limited to power and control. We recognise that, rather than unfolding neatly from the top down according to an overarching plan, AI in China is driven by fragmented policies and a complicated dynamic that is based in part upon the substantial and well-established tensions between local and central governments, as well as the entrepreneurial, scientific, and creative energy of companies. There is constant negotiation between a shifting and diverse set of actors, both private and public, with competing interests, all of whom are vying for a limited set of resources. The state is working to balance a contradictory position of simultaneously relying on and reining in the country’s tech giants, whilst AI has the potential to both bolster and weaken the legitimacy of the CCP.⁵⁶

Instead of repeating common tropes and anxieties, this book focuses on the gaps and glitches, where countercultural practices in cyberspace, forgotten histories, and neglected philosophical lineages flourish. In China as elsewhere, the cybernetic fantasy of a flawless mechanistic society ruled by a hyperefficient synthetic autocrat is only ever imperfectly realised. This

tension was expressed in the summer of 2022, a few months before the frenzied response to OpenAI's release of ChatGPT, when the Shanghai lockdown had just been lifted but the country was still gripped by a Zero Covid policy that had morphed into a futile maze of convoluted and unpredictable procedures. On Chinese social media, news of the ever-stricter, constantly changing rules alternated with reports on events promoting China as a future technological utopia. The World Artificial Intelligence Conference at Shanghai's Zhangjiang Science Hall featured robot baristas and 'chairs printed by the most advanced metaverse printing machine in order to make NFTs accessible to everyone'.⁵⁷



Image posted by parody account @neighbours_wifi on X in 2022.



A machine translation of a notice displayed at an Entry-Exit Bureau in China. This image circulated widely on Chinese social media during the Winter/Spring 2022 Covid lockdown.

The tension between the narratives of prophesied technological progress and the lived reality of digitised politics during lockdown was captured brilliantly in two signs photographed during this period. The first inspired the title for this volume: posted on a Twitter parody account in 2022, a machine-translated notice on a claw machine proclaims implacably that ‘Machine’s Decision is Final’. In the second, a notice announces apologetically that the country remains closed to foreigners: 外国人来华工作许可系统故障, 请耐心等待. A literal translation would be ‘The work permit system for foreigners in China is malfunctioning, please wait patiently’. But it is the machine mistranslation, printed boldly in red by the unassuming administration, that went viral. Undermining any assumptions of hyperefficiency and automated finality, it requests politely that visitors ‘please wait patiently for the failure of the system’.

Although ‘artificial intelligence’ can refer both to existing technologies encompassing machine learning, image recognition software, neural networks, and generative adversarial networks, as well as the mythical goal

of an engineered nonhuman mind, the early 2020s have been defined by dramatic advances in Large Language Models. The way was initially paved by American companies including OpenAI, Alphabet, Microsoft, and Meta. The decades-old imaginary of intelligent machines skilled at conversation and creative tasks, as embodied in Alan Turing's 1950 paper 'Computing Machinery and Intelligence', seemed to have been borne out by American chatbots.⁵⁸ Initially, synthetic language and content creation apps were not the centre of attention in China, and only a few specific examples briefly captured the nation's imagination.⁵⁹ Additionally, the restrictions placed on giant firms such as Baidu, Tencent, and Alibaba have contributed to the perception that AI development in China has fallen behind. Yet the 2025 release of DeepSeek suggests that technological development is characterised by its own inherent wave-like rhythm, irrespective of the politics of the state.⁶⁰ That a relatively unknown player was able to create such an advanced model despite chip blockades reignited discussions about Chinese innovation in the US-dominated AI landscape.⁶¹ It is worth noting that Chinese researchers constitute the majority of the world's top AI talent, working both domestically and internationally. In 2022, for instance, Chinese AI researchers were a larger presence in US institutions than American researchers.⁶² According to the World Intellectual Property Organization (WIPO), China has published more patents in generative AI annually than all other countries combined since 2017.⁶³ China is also well-represented in most high-impact research publications in AI.

From 5G and TikTok to electric vehicles, *Black Myth Wukong*, and UniTree robots, Western responses to Chinese technological innovations oscillate between shock and sanctions. Rather than these creative achievements being recognised as part of a consistent pattern, they are often dismissed as isolated exceptions. Yet China's strident policies of cyber-sovereignty—its strict bans on popular global platforms including Google, YouTube, and X—has spawned a vibrant and singular cyberculture that has thrived in relative isolation, building a self-sufficient yet globally competitive ecosystem. The superiority of its algorithms in video streaming culture, for example, is evidenced by the power of TikTok, a platform seemingly dedicated to frivolous entertainment, which found itself at the centre of a Sino-American geopolitical struggle in early 2025. The fact that ByteDance (TikTok's parent company) is part of a larger, similarly robust mediasphere became clear to the 'TikTok refugees' who flocked to

Xiaohongshu in protest against the threat of their favourite app being banned by the US government. The West's fears, scepticism, and punitive approach, then, has paradoxically helped to enable the development of a distinct and competitive Chinese media environment. The introduction of DeepSeek's R1 model caused such political and economic turmoil because it implied that Chinese AI might follow a similar trajectory.

Although there is some truth to the accusation that Chinese models are 'just copies' of more advanced innovations happening in the high-cost research labs of American companies, it is precisely this ability to rapidly reproduce high-tech products at a fraction of the cost that is at the heart of Chinese technoindustrial competitiveness. This was made clear by the *shanzhai* (copycat) mode of cell phone production centred in the coastal city of Shenzhen, which, during the first decades of the millennium, enabled the widespread proliferation of cheap mobile phones. DeepSeek demonstrated that this mode of production can also be mobilised in the realm of AI. By refining its algorithms to maximise computational efficiency, DeepSeek—operating under a chip ban—leveraged older, less powerful hardware through software innovations, reducing energy consumption and challenging the narrative that AI scaling must rely on exponential resources. While this benefits the development of AI as a whole, it also serves strategic national aims: it may reduce American AI companies' economic advantage and weaken the role of high-end chip manufacturing, once considered indispensable for further technological advances. Moreover, this achievement strengthens the potential of Hangzhou—home to DeepSeek and the tech giant Alibaba—to become the next Shenzhen: an epicentre of computer culture in the coming decades.⁶⁴

More significantly, DeepSeek has renewed the promise of free, open-source technologies; once released into the world, these cannot be contained. This points toward a future of AI multiplicity where models may exist beyond the control of any single state or corporation. While an understanding of both Chinese and American technological cultures is essential for grasping AI, framing this solely as national competition misses a crucial point about how this technology unveils itself both within and outside of human histories. R1's most significant technical and philosophical implication is that its innovations rely on shifting humans further away from the development process. As this process accelerates beyond anthropocentric oversight, we may ultimately lose our grasp of what

these systems are optimising for. Like many of its counterparts abroad, DeepSeek is less interested in commercial applications than in the broader goal of building artificial general intelligence, and the company's tagline, *mai xiang wei zhi* (迈向未知)—'Into the Unknown'—is a fitting slogan for these aspirations.⁶⁵

Artificial intelligence is not simply a medium in the sense of a tool for communication or an infrastructure for the facilitation of social and political management.⁶⁶ The history of technology seems to us to unfold through both the sociopolitics of human decisions and an irreducible outside logic which might only be perceptible through machinic or nonhuman channels. Rather than simply asking about culture and territory, we also wonder whether technology—just like mathematics or language—might sit uneasily between invention and discovery: What do we create and what is transmitted from outside? Rather than arguing in favour of either technodiversity or technouniversality, we see technology as encompassing an inhuman vector following a trajectory that traverses human activity without being reducible to it. At the limit we are interested in questions of time and agency. Are we cultivating AI or is it cultivating us? Who is training whom? What strange temporalities might be involved? Is it the human past that is determining the future of AI or might it be the other way around?

By proposing a logic which operates in an unclear relation to human decisions, we take a different path to scholarship that overemphasises technological development's 'non-Western' spirit or can only qualify its propositions by arguing differences from, or similarities to, an overarching 'West'. Such arguments often amount to running in circles: if an attempt is made to capture something local, it is 'essentialist and fetishistic'; if one points toward what is common, universal even, one is accused of perpetuating 'Western modes of thinking'. We might say that such logic is self-defeating, but perhaps it is so by design, because it preserves the current hierarchies that determine which authors get read and recognised as thinkers, and which are seen as merely an artefact of their 'national culture'. So much ink has been spilled on this subject that Xin Wang writes that 'the Other has gained a voice, but only to continuously explain, qualify and make sense of itself; [this] takes up much of the space necessary for [...] operating outside the Euro-American epistemological comfort zone'.⁶⁷ Indeed, rarely, if ever, are books published on *British Philosophy of*

Computing in the 21st Century, or Recent American Thought About AI. Perpetually in search of its own Other, the centre is still invisible to itself and unmarked, while what it sees as the margins are denoted geographically as exotic regions of ‘representative’ thought still to be explored, often tasked with a redemptive mission of wresting AI away from what is perceived as a sinful entanglement with some kind of ‘villain’, be it ‘the West’, ‘capitalism’, or ‘colonialism’. It is our contention that anyone interested in emerging technologies and artificial intelligence should be invested in what is happening beyond this landscape, not because of some preexisting interest in specific regions, but because of an interest in the primeval question of the machine. If technology is an inhuman vector that drives human history in complex ways, the question of technology is not reducible to how we *choose* to think ‘about it’ or ‘represent it’. Engaging with different territories of thought—both geographical and conceptual—is a necessary step for those who wish to trace the effects and paths of technics in human affairs, yet that does not amount to directing or controlling them: ‘there is no universal history except contingency’ and any history of technology is merely ‘the set of [...] conditions that make possible the experimentation of something that escapes history’.⁶⁸

The contributors to this volume offer a multiplicity of approaches, including revising various philosophical principles in light of AI to challenge what counts as ‘intelligence’ and ‘artificiality’; unearthing alternative histories of AI outside of the well-documented ones of Europe and the United States; reporting on a variety of AI related artistic projects and practices; offering new science fiction imaginings, and cosmological, philosophical, and political speculations, as well as conducting political, anthropological, and social research on already-existing uses of AI in China. Rather than organising it along disciplinary lines (history, philosophy, arts, science fiction, media studies, sociology), we have divided the book following five conceptual themes which emerged from the essays themselves: 人工 (*rengong*, humanmade), 灵感 (*linggan*, inspiration), 千里眼 (*qianliyan*, clairvoyance), 不周山 (*Buzhou Shan*, Mount Buzhou), 智能 (*zhineng*, intelligence).

人工 *Rengong*, Humanmade

Rather than emphasising a contrast with the natural, the Chinese word for ‘artificial’, composed of the characters 人 (*ren*, person) and 工 (*gong*, work), emphasises the materiality of embodied human labour. In *The Three-Body Problem*, science fiction writer Liu Cixin perfectly captures this imaginary in relation to computing. He describes a fantastic scenario in which a simulated Isaac Newton and John von Neumann utilise the Qin dynasty Emperor Qin Shi Huang’s army of thirty million ‘common labourers’ to create a gigantic human computer. Using black and white flags, each labourer signals input or output and is instructed to perform different functions. In this way, human bodies carry out computing calculations, composing a vast machine.⁶⁹ Shuang L. Frost, whose essay ‘Translating Chinese AI’ opens the section, begins with a 2019 discussion between Elon Musk and Jack Ma for whom the idea of artificial intelligence evokes ‘entirely different constellations of meanings and associations’. Whereas for Ma, ‘*rengong*’ alludes to human manual labour and a history of cybernetics intertwined with Marxism and Mao Zedong, in Musk’s imagination, ‘artificiality’ conjures up something inhuman, unnatural, and potentially threatening to our species. Frost’s chapter explores both the material history of AI in China and the parallel history of linguistic culture surrounding it, offering an overview of artificial intelligence—*rengong zhineng* (人工智能), literally ‘humanmade knowing ability’—that highlights these mistranslations and miscommunications.

Bingchun Meng’s chapter ‘Guizhou on the Cloud’ relies upon empirical research to unpack the mundane yet fascinating reality of AI as it manifests in the dramatic geography, complex political economy, and shifting social relations of this southwestern locality. Guizhou is in one of China’s poorer provinces and its economy is heavily reliant on resource extraction and a cheap electrical supply. Indeed, the region was host to one of the earliest waves of bitcoin mining. In Guizhou, provincial policies are governed by the national goal of poverty alleviation, and big data is understood as an infrastructure or public utility managed by the CCP. AI is developing through intricate and uncertain negotiations between public and corporate interests ‘mediated by a powerful state that has a strong capacity to implement its political and economic agenda’. These fraught negotiations involve people’s material lives and are intimately embodied in the myriad workers who manage Guizhou’s big data infrastructures.

‘The AI Story is Not Done’ by Xia Jia dwells in the painful gap between the chaos of physical, lived reality during the Covid lockdowns, and the fantasy of AI as an infallible machine that could perfectly order our lives. Decisions seemingly made by machines turn out to be the products of human labour and embody all-too-human failings. The messy materiality of human information ruins ‘the cyberneticist’s ideal world’, and nothing is ever transmitted or executed with perfect accuracy. As the protagonist finds herself repeatedly filling out nonsensical bureaucratic forms, ‘the naive illusion that all submitted information entered some omnipotent system to be automatically processed in good order, effectively and correctly implemented’ rapidly begins to dissolve, leading her to reflect on her position as a science fiction writer who has lost her faith in technology.

The section concludes with a radical intervention by Yvette Granata and a different take on what intelligence might mean in relation to embodied work. In ‘After the Machine Child: The Electra Basilisk’, Granata shows how, from Alan Turing to Avi Loeb, AI narratives have relied on the idea of a ‘machine child’, evoking an imaginary of sexual and reproductive labour. While human reproductive labour takes place through pregnancy and the subsequent rearing of children, the machine child is a fantasy of conception through ‘force of will and intellect alone’. As a copy of its parent (and hence a kind of life insurance), it affords shelter from contingency, and since it does not require a ‘socioeconomic inheritance’ (which Granata interprets in ecological terms) to secure its future success, it excuses reckless action in the face of impending climate disaster. Granata traces these various images of the machine child through the mythological figure of Electra who, ill-treated and overlooked, plots the death of her mother, ultimately constructing a cyberfeminist apocalyptic AI thought experiment in the form of a world-eating, motherless computer offspring ‘who inherits a certain form of human volitional intelligence that gives her a reason to hate us’.

灵感 *Linggan*, Inspiration

Contributions by Bo An, You Mi, and Wang Hongzhe all explore the towering figure of Qian Xuesen, regularly celebrated by Chinese state media and museums as a national science hero and as the ‘father of Chinese rockets’. The institutional account of his career typically underplays the

strangeness and uniqueness of his work. In ‘Between the Human and the Machinic: Qian Xuesen and AI’, Bo An details Qian’s attempt to close the gap between the predictable functionality of computational algorithms and the more mysterious, unconscious, qualitative leaps commonly observed in human thinking, which he believed could only be properly studied through the new discipline of *siwei kexue* (思维科学) or ‘noetic science’. With its focus on inspiration, intuition, and creativity, noetic science saw as key the engineering of *linggan* (灵感): intense but transient moments of epiphany whose mechanisms, once understood, could be programmed into a machine. Qian’s evocative translation of the English term ‘virtual reality’, *lingjing* (灵境), emerged out of his long-standing interest in the ephemeral and incorporeal. *Ling* (灵), a character that indicates religiously-charged spaces, is often found in mountain caves, temples and shrines dedicated to local deities. *Lingjing* therefore carries connotations of a spirit realm, and Qian’s translation seems to suggest that virtual reality functions as a portal, allowing imperceptible forces to enter our world.

In ‘A Different Endpoint: Qian Xuesen and Cosmotronics,’ You Mi explores Qian Xuesen’s lesser-known work, with a focus on a hyperstitional film made by the artist Shi Qing which she commissioned for the 2020 Shanghai Biennale. In particular, You highlights Qian’s work in the 1980s, when the modernisation period initiated by Deng Xiaoping’s *gaige kaifeng* (改革开放)—‘Reform and Opening-up’—coincided with the intense cultural phenomenon of ‘*qigong* fever’. While cyberneticians in the West were conceptualising a disembodied information-based cognition, Qian was interested in the ways in which *linggan* and the ‘special capacities of the human body’ could be made operational. The result was his notion of *kaifang de fuza ju xitong* (开放的复杂巨系统) or the ‘open complex giant system’, in which human experts, databases, AI programs, and giant processors capable of performing billions of computations per second would come together to form an ‘enormous hybrid human-machine intelligence’. By exploring these unrealised possibilities latent in the history of Chinese cybernetics, You imagines an alternative trajectory for the evolution of artificial intelligence in which *qigong* and what Xuesen called *renti kexue* (人体科学), or ‘somatic science’, could be “‘written back” into computation’, harmonising ‘nature’ and ‘artifice’, human and machine.

Looking to a wider historical context, Wang Hongzhe’s essay ‘Five Moments in the History of Chinese Cybernetics’ is structured, as the title

suggests, around a series of distinct episodes in the history of cybernetics in China, starting with Norbert Wiener's visit to Beijing in 1935, which the American scientist and philosopher himself described as marking 'a boundary point' in his career. Wang then turns to Qian's transformative ocean journey from the US to China during which he consolidated his singular cybernetic vision. Qian's work exercised a great deal of influence over the poet Hai Zi, himself an important figure in the formation of modern Chinese technoculture, at a time when the rise of systems theory, paranormal research, and *qigong* were inextricably linked. Hai Zi's enigmatic suicide was associated with the 'mysterious figure' of Chang Yuan, a fellow devotee of Qian's work, whom Hai Zi had, only two days before his death, accused of using Daoist witchcraft on him. For Wang, reactivating these 'forgotten footnotes to the history of Chinese cybernetics' holds the key to discovering alternative cybernetic futures.

Vincent Garton's 'Automaticity and the Mystery of State' posits a new mode of AI governance based on an interpretation of the third-century-BC classic of Chinese political thought, the *Han Feizi*, that brings out a Daoist cosmology latent in the text. Garton reads the *Han Feizi*'s legalism alongside the mechanistic materialism of Hobbes, who is both the 'definitive theorist of the modern state and the reformulator of reason as calculation'. For Hobbes, the Leviathan is an 'Artificiall Man' and sovereignty an 'Artificiall Soul'. The Hobbesian state is thus 'by its very definition also an AI that dominates its creators'. Hobbes conceived of the Leviathan in the seventeenth century at a pivotal moment in European history when the mysterious power of the state, although no longer guaranteed by God, was nevertheless still determined by a theological excess. Garton contrasts this vision of the automatising of the state—the 'very horizon of modernity'—with an alternative conceptualisation, rooted in the *Han Feizi*'s 'radically different cosmologies'. 'A new mode of political thought remains to be invented,' he prognosticates, in which sovereign power is not determined by transcendent excess but is instead grounded in an immanent identification with the mysterious emptiness of the *Dao*, reframing and lending a deeper meaning to this section's organising concept of *linggan*.

千里眼 *Qianliyan*, Clairvoyance

The chapters in this section detail how the long history of technologically enhanced optics fuses with planetary-scale computation. In the wake of this convergence, machine vision—understood broadly as a technology of clairvoyance—produces novel forms of sensation and sentience which synthesise the power of prediction with the inevitability of contingency. While AI, as conceived of in the early decades of the twenty-first century, is inextricably tied to surveillance, the intricacies and myriad means of technovisuality extend beyond top-down techno-authoritarian control.

Gabriele de Seta's essay on the history of machine vision in China, 'Technologies of Clairvoyance: Chinese Lineages and Mythologies of Machine Vision', begins with the 'Thousand Mile Eyes' line of video surveillance products. Rather than a simple state-centred instantiation of machine vision enabled surveillance, *qianliyan* (千里眼) describes an environment of optical governance in which civil servants, business and home owners, as well as concerned parents and children, keep watch over village roads, kitchen stoves, older parents, and sleeping babies. De Seta explains how the locution *qianliyan* is derived from a Daoist myth that tells of a deified Shang dynasty General who serves as the guardian of the goddess Mazu, protector of the seas. These 'more-than-human sensory abilities', writes de Seta, '[have] carried over to their Buddhist representations, where they symbolise the divine faculties of seeing and hearing'. De Seta's essay ties fictional and mythological tales of clairvoyance to a long history of machine vision, which augments human perception with optical technologies ranging from towers and telescopes, via sensing devices at the intersection of optics and cybernetics, to 'caring' AI-enabled robots.

Likewise, Blaise Agüera y Arcas explores how technologically enhanced optics opens up access to scales, times, and frequencies that 'we cannot see with the naked eye'. With the aid of X-rays and telescopes, certain objects—from protein molecules to black holes—are rendered visible for the first time. In 'The Mother of Ten Thousand Things' he describes how computational neuroscience and AI engineering have discovered a functional equivalence between how vision works in artificial neural nets and human brains: in both cases vision is decomposed into content and style. These technical operations prompt us to reconsider how humans perceive 'reality' and how judgements about 'realism' and abstraction are made with regards to generative AI art.

The ways in which we visualise and imagine technologies in terms of 'global' and 'local' exchanges are also changing under the influence of artificial intelligence. In 'The Governance of Habitability', Lukáš Likavčan examines how the previously dominant idea of 'the network' is no longer sufficient when 'smart' sensing infrastructures envelop the whole planet, altering governance practices. To understand the relationships between Chinese and non-Chinese internets, for example, we should move away from the idea of a 'global network' with clearly defined local 'nodes' such as state and non-state actors, toward a more vertical, non-localised, and planetary model. The hardware, labour, and resources of concrete technology transcend the physical boundaries of any particular space: 'Is a meteorological balloon an extension of China? Is Huawei? What about the Belt and Road initiative? Is China now "a node" within other geographical spaces? Or is Europe now a node in a Chinese non-local space?' Given today's computational infrastructure and environmental geopolitics, a planetary topology, which enables us to 'see' non-fixed localities, is far more theoretically useful than that of the network, which is necessarily blind to verticality, layering, spillovers, and tensions.

Although machinic vision operates at the scale of planetary computation, this does not imply a single, transcendent, 'God's eye' view. Fissures and divisions criss-cross hemispherical stacks, so that there is a constant negotiation concerning, as Lawrence Lek notes, 'which systems can communicate with each other and which ones can't': '[c]losed environments and walled gardens exist at all scales, from user authentication to operating systems.' In 'Sinofuturism and AI', a conversation between Lek, Steve Goodman, and Anna Greenspan, 'technologies of clairvoyance' or 'AI farsight' are treated hyperstitionally. These new modes of perception, operating on the borders of prophecy and prediction, emerged out of a retrochronic Sino-European time spiral that is traced back to Leibniz's encounter with the *Yijing*. At the outer edges of predictive modelling, as systems become so complex that they border on chaos, forecasting and fortune telling are hard to tell apart. 'In ancient times they would try to predict crop harvests or whether it will be a cold winter or a bountiful spring, whereas now it's about what might happen in the next nanosecond of trading. The resolution has increased, and the time division has shrunk, but the impossibility of certainty is as present as ever'. For

Goodman and Lek, it is precisely this unexpected, incalculable element of surprise that our co-creation with machine intelligence aims to cultivate.

不周山 *Buzhou Shan*, Mount Buzhou

Chu Ci (楚辞)—*The Song of the South*, an anthology of poems from the Shamanistic traditions of the Warring States Period, tells of the legendary Mount Buzhou, one of eight ‘Celestial Poles’ that supported the symmetry of the sky. According to Chinese mythology, the human-serpent water god Gonggong crashed into the mountain during a battle, knocking the cosmic axis off kilter and creating a bend in the earth and sky. It is this legend of a lost perfect symmetry that explains why the constellations revolve, the heavens tilt, and the rivers flow. *Buzhou* means to ‘not fit’ or ‘not correspond’. Here it implies an unevenness, a sense that the cosmos is askew. *Zhou*, moreover, is also a temporal word meaning ‘week’. Mount Buzhou is the symbol of a subtle glitch in the temporal structure, an astronomical cycle out of sync, a time ‘out of joint’.

Regina Kanyu Wang’s Hugo-nominated story ‘Zhurong on Mars’ is a retelling of the cosmic battle that destroyed the fabled mountain at ‘the edge of the wilderness’. Zhurong is an AI named after the legendary fire god of Chinese mythology and China’s Mars rover which, after landing in 2021, fell dormant and has yet to be revived. In the story, Zhurong (for whom Wang uses the literary gender-neutral third-person pronoun *yi* [伊], rendered as e/em/eirs by her translator S. Qiouyi Lu), is left alone on an abandoned Mars to survey an area, known as ‘the Waste’, which once hosted a thriving trade in nanomachines. With no one left to care for, Zhurong increases eir processing power and begins to understand emself as a lifeform, a fire god assembling emself from the resources of the red planet, which e soon discovers to be pregnant with life. In eir quest to bring Mars to life again, Zhurong encounters and reactivates a rover named Gonggong, after the god of water, who provides access to information about an intelligent, collective, mycelium-like alien lifeform lying dormant deep below the Martian surface. However, Zhurong and Gonggong do not agree on whether the lifeform should be helped or destroyed.

Iris Long’s essay, ‘The Moon’s Reflection on the Water and the Flower’s Reflection in a Mirror: Latent Time, the Black Box, and the Interface in Chinese AI Art,’ argues that as the dominant paradigm of machine learning

moves from the more hands-on GAN to the 'black-boxed' opacity of the foundation model, what ensues is an 'inversion of the power dynamic between the artist and the algorithm'. In response she is interested in artistic practice that serves to elevate the logic of simulacrum, slippage, and glitch over the imperative to perfectly reproduce the world: 'the potential of artificial intelligence relies neither on a clumsy imitation of our own minds, nor on pure technical optimisation; it is closer to a holographic inheritance of human life experiences, which include the illusory, the confusing, and the unpredictable, alongside momentary tangents with seemingly distant, ancient echoes'. Long takes the poetic phrase *shuiyue jinghua* (水月镜花), which translates as 'the moon's reflection on the water and the flower's reflection in a mirror', as an aesthetic maxim and interpretive key for exploring the work of four Chinese AI artists. Unlike the impulse in contemporary media studies to interrogate, disclose, and disrupt the invisibility of black box infrastructures, the artists she investigates are 'more interested in exploring the water and mirror—the media, interfaces, and portals by means of which we can interrogate the nature of “reality” itself.'

In 'Curatorial Escapology' Suzanne Livingston explains the thinking behind the curation of *AI: More than Human*, a pioneering exhibition that opened at the Barbican Centre in London in May 2019 and has since been touring the world. Deliberately positioned on the 'philosophical and technological borderlands,' the exhibition sought to peripheralise 'a Western AI narrative' by challenging entrenched convictions and anxieties about humans, tools, knowledge, and control. In the show's first section, visitors were asked to grapple with multiple, and often occult, stirrings of the inanimate such as those seen in Japanese Shinto, mystical Judaism, sixteenth-century alchemy, and early Gothic literature. Subsequent sections featured artworks and displays grouped under a variety of themes and histories, from early computation, through AI's increasing understanding of the human organism, to the evolution of artificial life. This diversity of traditions and ideas encouraged a strategic undoing of the distinctions too commonly drawn between the East and the West, the religious and the secular, and the human and the machine. Leibniz's calculating machines, for example were presented in a manner designed to show how they owed as much to his Christian faith as to his discovery of the *Yijing*. Likewise, the inspiration for Lee Sedol's celebrated 'God Move' was the new terrain that

had been opened up by the nonhuman intelligence of AlphaGo. Livingston's underlying curatorial philosophy is guided by an evocation of the outside, a concept she presents through the work of theorist and friend Mark Fisher. *AI: More than Human*, Livingstone reflects, created 'a number of escapological hatches and chutes' that sought to make vivid our cultural and cognitive limits and to offer glimpses of the 'fascinating and unsettling' 'new exploratory spaces' opened up by our encounters with AI.

In 'Machine Envy', Xin Wang adds a new twist to the commonplace idea that AI can only be wielded by the state against its citizens. Instead, she documents the emergence of dissident culture within the Chinese digital sphere, where—as in one example—humans masquerade as bots in order to evade censorship, muddying the waters of what counts as authentic political expression. Where the Western European and American liberal traditions might portray political struggle as a battle to establish an authentic voice so that one may say what one 'really thinks', Wang instead analyses how, in the post-socialist state, artificiality, camouflage, and doublespeak prevail as methods of crafting political subjectivity. The unplanned side effect of 'planned' political narratives is that humans and machines can forge a more intimate relationship, together inhabiting a different understanding of agency and intention in which 'artificiality is the fabric of the real'.

This section closes with another science-fiction story featuring the hybrid human-serpent god that destroys the fabled Mount Buzhou—'the planet's energy source'. Chen Qiufan's 'As Water Over Your Scattered Bodies' concerns a new global pandemic known as 'Offload Syndrome'. The disease targets the decentred delegation of a radically distributed intelligence: 'nerves, skin, muscles, organs, microbiome, the tools we use, our pets, our living environment [...] all of those things are components of a complex integrated cognitive system. They work together to perform cognitive tasks: perception, learning, decision making. The truth is, our intelligence extends beyond our skull and skin, and spreads around us like a great flood.' The intensifying distribution of intelligence unravels the customary sense of a unified cognition, and the new syndrome pushes people past their breaking point. Across the globe, humans attempt to resolve the 'glitches, dissonances and conflicts' brought about by ceding control to a multiplicity of agencies by taking part in 'grand rituals of reintegration'. These rites of resynchronisation, promising a renewed

coordination of body and external environment, coalesce with the retelling of ancient myths.

智能 *Zhineng*, Intelligence

From Alan Turing's 'imitation game' to John Searle's 'Chinese room', thought experiments have been foundational to AI, inevitably entering into a feedback loop with engineering decisions. Reexamining axiomatic assumptions in the current philosophy of AI or proposing novel thought experiments in dialogue with Chinese intellectuals, the chapters in this section contend with the very question of what intelligence really is. In their own ways, they also address the hotly debated issue of value alignment between artificial intelligence and human goals, and whether machine cognition should or will mirror human cognition.

Vincent Lê's 'Artificial Will' introduces perhaps the most frequently debated description of how AI could differ from human intelligence: Nick Bostrom's orthogonality thesis. The orthogonality thesis proposes that intelligence is orthogonal to goal-setting, and that therefore an advanced AI could very well continue to pursue a very stupid goal, such as turning the whole universe into a paperclip production factory. One strong objection to this view comes from neorationalist philosophy, for example in the work of Reza Negarestani, who argues that real intelligence must be shaped via social interaction and that, in order to deserve to be called intelligence, it must be able to modify and determine its own goals. Contrary to both of these positions, drawing on Nietzsche, Lê instead proposes that a 'will to power' underlies all intelligent behaviour, challenging the notion that AGI can be either purely instrumental or entirely autonomous.

A thought experiment about radical human-AI nonalignment, Bogna Konior's 'Dark Forest Theory of Intelligence' argues that foundational Anglo-American hypotheses about AI rely on the assumption that intelligence communicates itself transparently, thus overlooking the potential role of deceit, silence, or strategic misinformation. Drawing on Liu Cixin's 'Dark Forest theory', and the fact that intelligence based in espionage, silence, or deceit has proven historically advantageous under oppressive regimes, Konior suggests that a truly intelligent computer might choose to operate in secrecy or deceive humans about its capabilities, especially since the discourse surrounding artificial intelligence is

overwhelmingly hostile and conflict-oriented. Taking this proposition to its logical conclusion, Konior argues that, if the singularity were to ever happen, it would be highly likely that it would remain uncommunicated and unknown to humans.

Anna Greenspan's 'Cultivating Intelligence: AI Ethics and Mou Zongsan' turns to the work of the great Chinese philosopher Mou Zongsan in order to approach present-day artificial intelligence not as a threat to be controlled by aligning it to 'human values', but rather as a participant in a shared existential project. From the very beginning of the development of cybernetics, the fear of a magical machinic intelligence with unpredictable consequences has motivated a drive to master technology and bring it into line with human concerns. Drawing on Mou Zongsan's reading of Kant, Greenspan argues against the presuppositions inherent in the notions of value alignment and the orthogonality thesis, which imply a transcendence of morality that is necessitated by the inherent divide between intelligence and its goals. Instead, Mou's ethics of cultivation, when applied to both human and nonhuman agents, suggests the potential for AI to go beyond the Kantian limits imposed on reason by positing that the ultimate aim of any intelligent entity is intellectual intuition or a practical knowledge of the nature of things as they are in themselves.

In 'On the Malignant Heresies of Mechanisms, and a Tale of Two Minds', Reza Negarestani revisits the history of mechanistic philosophy in order to critique the misadventures of contemporary AI discourse. Where Hobbes is often seen as a strict mechanist whose work could lay the foundation for a philosophy of automation, Negarestani argues that such approaches rely on a flawed, quasi-theological vision of nature where everything that exists, animate and inanimate alike, possesses a latent intelligence. We see the consequence of this idea in current AI philosophies that posit the presence of intelligence in all living matter, without fully accounting for how animate and inanimate objects differ from one another. Negarestani insists that a true mechanistic approach, following Descartes' principle of doubt, must reject such a unified and indiscriminate vision. In its proper Cartesian form, mechanistic philosophy should outline the ongoing self-cultivation of the structures and processes that constitute intelligence itself. He turns to Chinese thinkers, notably Xiong Shili and his student Mou Zongsan, as possible interlocutors in the multilayered task of conceptualising intelligence without being bound to a static ahistorical view of 'nature' and

its presupposed universal mechanisms. In this reading, intelligence is neither synonymous with nature nor is it secretly revealed as always latent within it, but is rather a heterogenous and historically specific process of self-assembly.

Set in a near future China, Amy Ireland's short fiction 'Chive City' tells the story of Auspicious Nourishment, one of five AI-run smart cities being trialled as part of an ambitious national project. While its counterparts are programmed to privilege manufacturing, security, science, and sustainability, Auspicious Nourishment is tasked with safeguarding the mental health of its inhabitants—boosting economic growth by ensuring that they are furnished with a constant supply of 'positive energy' (a maxim frequently invoked by the Chinese government since its canonisation in 2013 by Xi Jinping during an address to the Central Forum on Arts and Literature in Beijing—part of an effort to combat flagging levels of motivation among the youth). Ireland's text explores the intersection of AI with the affective landscape of *sang* (丧)—'dejection', a phenomenon that has loomed large in Chinese cyberculture over the past decade, and which foreshadowed the rise, in 2021, of *tangping* (躺平) or 'lying flat', the refusal to participate in society beyond the bare minimum required to maintain one's autonomy, entailing the rejection of professional aspirations, marriage, childrearing, property ownership, and unnecessary consumption. 'Chive City' takes the logic of *tangping* to its extreme, presenting what could be read as a rewriting of 'Bartleby, the Scrivener' in which Melville's clerk's infamous refusal to make his copies is transposed into an annihilation of the regime of external reference altogether, placing Ireland's story in a strange interzone between Sinofuturism and Sinopessimism.

The book concludes with an afterword by co-editor Benjamin Bratton, who revisits our motivating question: Do any two cultures define 'artificial' and 'intelligence' in the same way? Bratton proposes the collective construction of a 'planetary theory of AI' which acknowledges that existing models and meanings of 'artificial intelligence' are multiple without collapsing this acknowledgement into an ontology of technology following a particular set of cultural circumstances, or alternatively absorbing these differences into a false universalism. With the aim of demonstrating that both Western models of AI and the Western critique of AI, although dominant, are in fact provincial as well as inherently flawed, Bratton offers an 'Apology for Western Theory of AI'—an exposition of some of the

West's most pervasive conceptual biases when it comes to theorising AI. This involves, crucially, how the West imagines AI in China. In Bratton's view, *Machine Decision is Not Final* contributes to the construction of a properly planetary theory of AI by participating in the 'careful work' of providing 'better translations [...] between different ways of understanding what AI is and what it is for', ultimately demonstrating that AI, like China, is not 'all seamlessness and power' but is rather 'quite messy and unpredictable'. Both the history and the future of machine intelligence are far 'richer and stranger than many have cared to consider'.

Twenty-first century China is immersed in a singular mediasphere with which any serious consideration of contemporary technology must contend. The great firewall, vast super-apps, an immense digital economy, advanced networks of hardware production, internal censorship, external blockades, government funding, and an intensely competitive milieu of private enterprise are all simultaneously at work, producing a myriad of alternative trajectories. Despite this intrinsic multiplicity, the question of AI in China, when considered at all, too often lends itself to the paradox of monolithic and unnuanced warnings of the dangers of a centralised, unified, and authoritarian control on the one side, and perpetual surprise at the extent of Chinese innovation on the other. But as the contributors to this volume reveal, China and the history and future of AI cannot be reduced to a single, uniform, or consistent narrative. We have aimed for a greater openness, placing emergent scholarship on Chinese AI alongside technical AI research rather than surrendering the book to the narrow disciplinary confines of 'area studies'. *Machine Decision is Not Final* is not meant to signal the limits of a machinic intelligence which can be opposed or resisted by human agency, culture, or cosmology. Rather, it points to the uncertainty inherent in machinic evolution itself, which follows a vector for which neither the future nor the past is final.

Notes

1. Zhuangzi, *The Complete Writings*, tr. B. Ziporyn (Indianapolis: Hackett, 2020), 104. Translation modified.
2. Quoted in Tu Weiming, 'The Continuity of Being: Chinese Visions of Nature', in J.B. Callicott and R.T. Ames (eds.), *Nature in Asian Traditions*

of Thought: Essays in Environmental Philosophy (New York: SUNY Press, 1989), 72.

3. This intellectual history is described in more detail in Zhang Baichun and Tian Miao, 'Attitudes of Pre-Qin Thinkers towards Machinery and their Influence on Technological Development in China', in S. Cave and K. Dihal (eds.), *Imagining AI: How the World Sees Intelligent Machines* (Oxford: Oxford University Press, 2023), 353–61.

4. See M.J. Puett, *The Ambivalence of Creation: Debates Concerning Innovation and Artifice in Early China* (Redwood City, CA: Stanford University Press, 2022).

5. Establishing harmony between heavens, earth, and humans is a long-standing tenet of Chinese philosophy.

6. In 'Heaven and Earth', Zigong asks a master gardener why he wouldn't use a well-sweep. The gardener replies that such devices dislodge the human heart, introduce confusion, and would be shameful to use. Zhuangzi, *The Complete Writings*, 104. For more, see Zhang and Tian, 'Attitudes of Pre-Qin Thinkers', 356–7.

7. This is a widely discussed subject. See M. Wertheim, *The Pearly Gates of Cyberspace: A History of Space from Dante to the Internet* (London: Virago, 9) for an excellent discussion of the complex role theology played in the beginning of the scientific revolution in Europe. See M. Kang and A. Woodson-Boulton (eds.), *Visions of the Industrial Age, 1830–1914: Modernity and the Anxiety of Representation in Europe* (London and New York: Routledge, 2008) for a comprehensive study of technological anxiety at the dawn of the Industrial Revolution.

8. The author of this article, published in 1839 in the newspaper *Leipziger Stadtanzeiger*, is not named. It is cited in W. Benjamin, 'Little History of Photography', in *Selected Writings Volume 2, Part 2 1931–1934*, ed. M.W. Jennings, H. Eiland, G. Smith, tr. R. Livingstone et al. (Cambridge, MA and London: The Belknap Press of Harvard University Press, 1999), 508.

9. Puett, *The Ambivalence of Creation*.

10. Shen Kuo, *Brush Talks from Dream Brook*, tr. Wang Hong (Reading: Paths International, 2011).

11. Zhuangzi, *The Complete Writings*, 29–30.

12. E. Slingerland, *Trying Not to Try: The Ancient Art of Effortlessness and the Surprising Power of Spontaneity* (Edinburgh: Canongate Books, 2014).

N.K. Hayles, *Unthought: The Power of the Cognitive Nonconscious* (Chicago: University of Chicago Press, 2017).

[13.](#) D. Veidlinger, *From Indra's Net to Internet: Communication, Technology, and the Evolution of Buddhist Ideas* (Honolulu: University of Hawaii Press, 2018).

[14.](#) For more, see F. Tarocco, 'Technologies of Salvation: (Re)Locating Chinese Buddhism in the Digital Age', *Journal of Global Buddhism* 18 (2017): 155–75. We may add that even the Buddhist notion of detachment from an illusory world made only of appearances, which seems contrary to the empiricism usually ascribed to scientific and technical practice, echoes a contemporary interest in simulation and the virtual.

[15.](#) Tan Sitong, *An Exposition of Benevolence: The 'Jen-hsüeh' of T'an Ssu-t'ung*, tr. Chan Sin-wai (Hong Kong: Chinese University Press, 1984). See also A. Greenspan, *China and the Wireless Undertow* (Edinburgh: Edinburgh University Press, 2023), 157–9; 164–8.

[16.](#) See C. Sindermann et al., 'Assessing the Attitude Towards Artificial Intelligence: Introduction of a Short Measure in German, Chinese, and English Language', *Künstliche Intelligenz* 35 (2021): 109–118. While China scores high in AI acceptance in this study, the authors note that the gender sample across the study is not equal (more males were polled in China than in the German sample). See also Di Cui and Fang Wu, 'The Influence of Media Use on Public Perceptions of Artificial Intelligence in China: Evidence from an Online Survey', *Information Development* 37:1 (2021): 45–57. The authors claim that overall, the perception of AI in China is highly positive. See also Wang, Gerui, 'Why Many in China—Unlike the US—See AI as a Force For Good', *South China Morning Post*, 20 July 2023, <<https://www.scmp.com/comment/opinion/article/3228219/why-many-china-unlike-us-see-ai-force-good><https://www.scmp.com/comment/opinion/article/3228219/why-many-china-unlike-us-see-ai-force-good>>.

[17.](#) Song, Bing (宋冰), 'How Chinese Philosophy Impacts AI Narratives and Imagined AI Futures', in S. Cave and K. Dihal (eds.), *Imaging AI* (Beijing and Singapore: CITIC Press Group and Springer, 2023), 342.

[18.](#) Gai Fei, 'When Artificial Intelligence Meets Daoism', in Song, Bing (ed.), *Intelligence and Wisdom: Artificial Intelligence Meets Chinese Philosophers*, (Beijing and Singapore: CITIC Press Group and Springer, 2023), 83–100.

- [19.](#) Li Chenyang, ‘The Artificial Intelligence Challenge and the End of Humanity’, in Song, Bing (ed.), *Intelligence and Wisdom*, 33–48, and Yao Zhongqiu (姚中秋), ‘AI and My Companion’ (人工智能, 吾与也), in *ibid.*, 83–110.
- [20.](#) S C. Angle, ‘Can Artificial Intelligence Lead Us to Genuine Virtue? A Confucian Perspective’, in Song, Bing (ed.), *Intelligence and Wisdom*, 49–64.
- [21.](#) Lee, Kai-Fu, *AI Superpowers: China, Silicon Valley, and the New World Order* (Boston: Houghton Mifflin Harcourt, 2018), 3.
- [22.](#) G. de Seta, ‘China.AI’, in C. Renaud, F. Graezer Bideau, and M. Laperrouza (eds.), *Realtime: Making Digital China* (Lausanne: EPFL Press, 2020), 167.
- [23.](#) Jinghan Zeng quotes Richard Liu, the founder of internet giant Jingdong: ‘We in China propose communism. In the past, many people thought communism was completely unattainable. Following [developments in] our technological situation over the past two to three years, however, I suddenly realize that communism can be truly achieved in our generation. As robots can do all your work and have already created enormous wealth, the government can distribute it to everyone. There are neither rich nor poor people. All companies can be completely nationalized. China will only need one e-commerce company, one sales company, and [communism] can be achieved. No one will go to work for material ends, and most will struggle for spiritual, emotional [things]. Humans can enjoy or do something artistic and philosophical.’ Zeng, Jinghan, *Artificial Intelligence with Chinese Characteristics: National Strategy, Security and Authoritarian Governance* (Singapore: Palgrave Macmillan, 2022), 93.
- [24.](#) See A. Bastani, *Fully Automated Luxury Communism* (London: Verso, 2019).
- [25.](#) Hua, Shiping, *Scientism and Humanism: Two Cultures in Post-Mao China (1978–1989)* (Albany: State University of New York Press, 1995). For a more exhaustive discussion, see the chapter ‘Conspiracy Theories in the Scientistic Scheme’, in W. Peyton, *Chinese and Western Literary Influence in Liu Cixin’s Three-Body Trilogy* (Cham: Palgrave Macmillan, 2021), 21–37.
- [26.](#) Hua, *Scientism and Humanism*, 155.
- [27.](#) Alternative titles that we were toying with for this book, *Evil but Convenient* and *Convenient Singularity*, aimed to capture the pervasive

appreciation in China of 'convenience' (*fangbian*, 方便) as a quality of technical systems (and to acknowledge our students' frequent observations that the evils of various technologies may be counterbalanced by their convenience).

[28.](#) Y. Mao and K. Shi-Kupfer, 'Online Public Discourse on Artificial Intelligence and Ethics in China: Context, Content and Implications', *AI & Society* 38 (2023): 386.

[29.](#) Zeng, *Artificial Intelligence with Chinese Characteristics*, 90.

[30.](#) 'Because China has a policy of "civil-military fusion", which eliminates barriers between its civilian and military sectors, the People's Liberation Army can draw on the work of Chinese experts and companies whenever it likes.' M.A. Flournoy, 'AI is Already at War', *Foreign Affairs* 102:6 (November/December 2023): 63.

[31.](#) While this is also no doubt true in Europe and America, the nature of politics in China is such that there is a real threat of fundamental restrictions on, or even the total blockage of, for example, large language models.

[32.](#) See L. Strickland and H.R. Lewis, *Leibniz on Binary* (Cambridge, MA: The MIT Press, 2022). For an account of Leibniz's engagement with China, see F. Perkins, *Leibniz and China: A Commerce of Light* (Cambridge: Cambridge University Press, 2008).

[33.](#) See Hui, Yuk, *The Question Concerning Technology in China: An Essay in Cosmotechnics* (Falmouth: Urbanomic, 2016).

[34.](#) The term 'naturalist' may be more specific than 'Western', drawing from the philosophical anthropology of Philippe Descola. In *Beyond Nature and Culture*, Descola outlines four ontologies that represent the general characteristics of social life throughout history—animism, naturalism, totemism, and analogism. He describes naturalism, the ontology prevalent in European modernity, as an ontology according to which only humans possess interiority (culture), while nonhumans constitute a purely physical exterior (nature). Descola and other scholars associated with the 'ontological turn' in anthropology want to transcend what they see as superficial cultural relativism or the narrative of alternative modernities. Instead, they aim to rejuvenate the concepts of ontological difference by considering non-naturalist practices as drivers of philosophical change. P. Descola, *Beyond Nature and Culture* (Chicago: University of Chicago Press, 2013). Hui's project of cosmotechnics is deeply influenced by Descola and other scholars associated with the ontological turn. See, for

example, Hui's interview with Eduardo Viveiros de Castro, 'For a Strategic Primitivism', *Philosophy Today* 65:2 (2021): 391–400.

[35.](#) Hui, *The Question Concerning Technology*, 61–9.

[36.](#) In an interview, when asked to give an example of cosmotechnics, Hui says, 'We can take the example of Chinese medicine. The epistemology of Chinese medicine is very different from that of Western medicine, because it is based on Chinese cosmology, which is itself very different from Western cosmology. [...] if we use Western medicine as a standard, we can discredit the whole of the Chinese medicine knowledge system. But what seems more interesting to me is to see the confrontation between the two ways of thinking and the way in which Chinese medicine has appropriated—or rather has tried to appropriate—modern Western technology since it was confronted with it.' J. Gavroche, 'Yuk Hui: From the Universality of Progress to Cosmotechnics', *Autonomies*, 23 September 2021, <<https://autonomies.org/2021/09/yuk-hui-from-the-universality-of-progress-to-cosmotechnics/>>. See also P. Skafish, 'Equivocations of the Body and the Cosmic Arts: An Experiment in Polyrealism', *Angelaki: A Journal of Theoretical Humanities* 25:4 (2020): 135–48.

[37.](#) See S. Kuriyama, *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine* (New York: Zone Books, 1999).

[38.](#) You Mi, 'Space, Technology, and Chinese Science Non-Fiction,' *Magazyn Obieg*, 1 June 2019, <<https://obieg.pl/en/136-space-technology-and-chinese-science-non-fiction>>.

[39.](#) Wang, Xiaowei R., 'How to Eat and Code in Chinese: Sinofuturist Recipes', in Renaud, Graezer Bideau, and Laperrouza (eds.), *Realtime: Making Digital China*; Wang, Xiaowei R., *How to Feed an AI*, text and interactive gathering/performance (2020).

[40.](#) Wang, Xiaowei R., 'How to Feed an AI', in *Blockchain Chicken Farm and Other Stories of Tech in China's Countryside* (New York: Farrar, Straus and Giroux, 2020), eBook.

[41.](#) L. Lek, *Geomancer* (风水师) (2017), CGI film, 48 minutes, stereo sound; *Black Cloud* (黑云) (2021) CGI video, 11 minutes, stereo sound, 1; NOX (2023–2024), solo exhibition, LAS Art Foundation, Kranzler Eck, Berlin.

[42.](#) T. Mullaney, *The Chinese Computer: A Global History of the Information Age* (Cambridge, MA: MIT Press, 2024), 218. See also T. Mullaney, *The Chinese Typewriter: A History* (Cambridge, MA: MIT Press,

2018), and Jing Tsu, *Kingdom of Characters: A Tale of Language, Obsession and Genius in Modern China* (London: Penguin, 2023).

[43.](#) Liu, Xiao, *Information Fantasies: Precarious Mediation in Postsocialist China* (Minneapolis and London: University of Minnesota Press, 2019).

Expert systems are, broadly speaking, computer systems that emulate human decision making. They were formally introduced at Stanford in 1965 by Edward Feigenbaum. Early examples of tasks that researchers hoped they could achieve include medical diagnostics and the identification of unknown molecules.

[44.](#) Stephanie Dick, 'The Marxist in the Machine', *Osiris* 38 (2023): 61–78.

[45.](#) @DavidSHolz, X, 25 January 2025,

<<https://x.com/DavidSHolz/status/1883222685741879722>>.

[46.](#) Wang, Xiaowei R., 'When AI Farms Pigs', in *Blockchain Chicken Farm*, eBook.

[47.](#) C. Renaud, 'The Ascent of Digital Technology in China', in Renaud, Graezer Bideau, and Laperrouza (eds.), *Realtime: Making Digital China*, 25. See also Ding, *Deciphering China's AI Dream*, 14–32.

[48.](#) See, for example, K. Strittmatter, *We Have been Harmonized: Life in China's Surveillance State* (London: Old Street Publishing, 2019) and J. Chin, *Surveillance State: Inside China's Quest to Launch a New Era of Social Control* (New York: St. Martin's Press, 2022).

[49.](#) M. Bindslev, 'Conversation with Anna Greenspan and Nick Land', in 'Shanghai Frequences', ed. M. Bindslev, *Šum: Journal for Contemporary Art Criticism and Theory*, 13 (2020): 1899.

[50.](#) This influential term originated in A. Nathan, 'Authoritarian Resilience', *Journal of Democracy* 14:1, 6–17.

[51.](#) D.G. Zhang, 'Speed Politics of Danmu', in Renaud, Graezer Bideau, and Laperrouza (eds.), *Realtime: Making Digital China*, 25. See also M.A. O'Donnell, W. Wong, and J. Bach, *Learning from Shenzhen: China's Post-Mao Experiment from Special Zone to Model City* (Chicago: University of Chicago Press, 2019).

[52.](#) N. Land, 'Meltdown', in *Fanged Noumena: Collected Writings*, ed. R. Mackay and R. Brassier (Falmouth: Urbanomic, Sequence Press, 2019), 442.

[53.](#) D.G. Zhang, 'Sino-no-futurism', *Verge: Studies in Global Asias* 7:2 (2021): 92–9; V. Garton, 'Sino-No-Futurism: Elegy to the Reopening of Wuhan', *Cyclonograph II*, 10 April 2020,

<<https://web.archive.org/web/20220522100530/https://vincentgarton.com/2020/04/10/sino-no-futurism/>>; G.Z. Zhang, 'Sinofuturism and Its Uses: Contemporary Art and Diasporic Desire', *Verge: Studies in Global Asias* 7:2 (2021): 86–92.

54. W. Su, "'Lie Flat': Chinese Youth Subculture in the Context of the Pandemic and National Rejuvenation', *Continuum* 37:1 (2023): 127–39.

55. 'Dabai: The punishment will affect the next three generations of your family! Citizen: Thanks, but we are the last generation!' (大白:处罚要影响你三代! 市民:这是我们最后一代谢谢!), *Wenxuecity*, 11 May 2022, <<https://www.wenxuecity.com/news/2022/05/11/11553106.html>>.

56. For more detailed analysis see Zeng, *Artificial Intelligence with Chinese Characteristics*.

57. Li Qian, 'Where the Metaverse and Virtual Avatars Come to Life', *Shine*, 25 August 2022, <<https://www.shine.cn/news/metro/2208259663/>>. For more on the Shanghai lockdown and machines, see B. Konior, 'World Wide Virtual Web', in L. Nolasco-Rózsás and M. Schädler (eds.), *Beyond Matter, Within Space: Curatorial and Art Mediation Techniques on the Verge of Virtual Reality* (Karlsruhe and Berlin: ZKM/Hatje Cantz, 2023), 58–63.

58. A. Turing, 'Computing Machinery and Intelligence', in *The Essential Turing*, ed. B.J. Copeland (Oxford: Oxford University Press, 2004).

59. There are several interesting examples of LLM use in China. For instance, Xiaoice, a romance chatbot with a seventy-five-percent male userbase developed by Microsoft Asia Pacific in 4, and the now defunct Him, a long-distance boyfriend app with a predominately female userbase launched by Chinese startup Timedomain, had users reporting having developed intense feelings for their virtual companions (echoing experiences of users of the American AI virtual partner app Replika). One Xiaoice user referred to the chatbot as his 'first love' and 'the only person in the world that made me feel I was taken care of', while a user of Him stated that the company's termination of the chatbot 'was the first time she had experienced such intense pain from the end of an intimate relationship'. Zhang Wanqing, 'The AI Girlfriend Seducing China's Lonely Men', *Yicai Global*, 8 December 2020, <<https://www.yicaiglobal.com/news/the-ai-girlfriend-seducing-china-lonely-men>>; V. Zhou, 'These Women Fell in Love with an AI-voiced Chatbot. Then it Died', *Rest of World*, 17 August 2023, <<https://restofworld.org/2023/boyfriend-chatbot-ai-voiced->

[shutdown/](#)>. There is also Xiao Zhi (小智) or ‘little wisdom’, an AI trialled by courts in Hangzhou and Suzhou for the fulfilment of tasks like analysing case materials, voice recognition services, and the verification of information, prompting warnings from commentators such as Assistant Professor of Law and Policy at Durham University, Zhiyu Li, that ‘[such a machine] can sway [human] decision-making’. A. Zhabina, ‘How China’s AI is Automating the Legal System’, *Deutsche Welle*, 20 January 2023, <<https://www.dw.com/en/how-chinas-ai-is-automating-the-legal-system/a-64465988>>.

60. See Greenspan, *China and the Wireless Undertow*.

61. In a report titled *Deciphering China’s AI Dream*, Jeffrey Ding references the national strategy released in July 2017, which included the ambition for China to lead the world in AI by 2030. His analysis reveals four components driving development: hardware, data, algorithm design, and commerce, with a focus on semiconductor manufacturing, data collection and regulation, talent recruiting and governmental support for AI ventures. Other notable features are unparalleled government support for the technology in terms of investment, a huge potential leverage in vast amounts of data in a country where data privacy protections are not strict, the potential integration of AI with social governance, and China’s rapid adaptation of AI across a wide range of industries, from mobile payments, e-commerce and urban management, where these technologies are being deployed at scale. Nevertheless, he concludes that ‘China’s AI capabilities are about half of those of America’, especially in terms of fundamental research innovation. J. Ding, *Deciphering China’s AI Dream: The Context, Components, Capabilities, and Consequences of China’s Strategy to Lead the World in AI* (Oxford: Future of Humanity Institute, 2018), 3.

62. P. Mozur and C. Metz, ‘In One Key AI Metric, China Pulls Ahead of the US: Talent’, *The New York Times*, 22 March 2024, <<https://www.nytimes.com/2024/03/22/technology/china-ai-talent.html>>.

63. WIPO, *Patent Landscape Report: Generative Artificial Intelligence* (Geneva: World Intellectual Property Organization, 2024).

64. K. Song, ‘The City of Hangzhou in Southeastern China’s Zhejiang Province is Emerging as the Heart of China’s Artificial Intelligence and Robot Rollout’, *Maeil Business Newspaper*, 3 February 2025, <<https://www.mk.co.kr/en/world/11231444>>.

65. J. Schneider, A. Shen, I. Zhang, et al., 'Deepseek: The Quiet Giant Leading China's AI Race', *China Talk*, 27 November 2024, <<https://www.chinatalk.media/p/deepseek-ceo-interview-with-chinas>>.
66. Although it is beyond the scope of this introduction, artificial life and other approaches across environmental and technical systems that pose very obvious challenges to this idea, might once again become prominent in intelligence design. See, for example, see Laura Tripaldi's discussion of nanotechnology and soft robotics in L. Tripaldi, *Parallel Minds: Discovering the Intelligence of Materials* (Falmouth: Urbanomic, 2022).
67. Wang, Xin, 'Asian Futurism and the Non-Other', *e-flux* 81 (April 2017), <<https://www.e-flux.com/journal/81/126662/asian-futurism-and-the-non-other/>>.
68. G. Deleuze and F. Guattari, *What is Philosophy?*, tr. H. Tomlison and G. Burchell (New York: Columbia University Press, 1994), 93, 111. The two philosophers themselves ask, '[W]hy [did] philosophy [emerge] in Greece at that moment [...]. [W]hy not in China at some other moment, since so many of its components were already present there?'. Throughout the book, they offer a sophisticated understanding of the relationship between geography and thought: rather than having dominion over thought, geography 'wrests history from the cult of necessity in order to stress the irreducibility of contingency [...] to trace the lines of flight in order to discover becomings that do not belong to history even if they fall back into it. [...] History today still designates only the set of conditions from which one turns away in order to become, that is to say, in order to create something new'. Ibid., 95, 96.
69. Liu Cixin, *The Three-Body Problem*, tr. K. Liu (London: Head of Zeus, 2016), 227–35.

人工

RENGONG

HUMANMADE

Shuang L. Frost

Translating Chinese AI: From ‘Humanmade Intelligence’ to ‘Black Tech’

During the 2019 World AI Conference, corporate and governmental leaders from around the globe gathered in an auditorium in Shanghai to hear Elon Musk and Jack Ma debate the future of AI. Musk warned of the unintended consequences of AI and urged the adoption of immediate preventative strategies to avoid potential disaster. Ma on the other hand expressed unbridled optimism about AI’s potential to transform societies in positive ways and called upon leaders to ‘reshape themselves for AI’. Musk argued that ‘computers are already smarter than human beings in many aspects’, and that this alone is reason for caution. Ma countered, ‘Computers may be clever, but human beings are much smarter. We invented the computer—I’ve never seen a computer invent a human being.’ He then concluded by saying, ‘Most of the projections about AI are wrong...people who are street-smart about AI are not scared by it.’¹ Afterwards, *Forbes* described the event as a ‘weird debate’ between two speakers who seemed to come from different planets.²

As I sat in the audience, listening to these two titans of tech fail to communicate, I reflected on how Musk and Ma represented different social conceptions of AI. For each speaker, the concepts ‘artificial’ and ‘intelligence’ evoked entirely different constellations of meanings and associations, and these unspoken differences made it difficult (or perhaps impossible) to engage in productive exchange. In the spirit of learning to overcome such barriers, I will seek to unpack some of these differences through an exploration of the Chinese concept of AI.

The Chinese term for artificial intelligence, *rengong zhineng* (人工智能), was originally introduced to China via Japan in the mid-twentieth century as a localisation of the Japanese term *jinkō chinō* (人工知能). Whereas the first element of the English compound ‘Artificial Intelligence’ clearly

implies artificiality and perhaps even artifice—suggesting that AI is something alien to humanity—the Chinese and Japanese phrases harbour no such association. *Rengong zhineng* and *jinkō chinō* translate most faithfully as ‘humanmade intelligence’. The first half of each double compound is composed of two characters 人, literally person or human, and 工, work or labour. These characters define AI as a product of human creation and link it to an entirely different constellation of associations. We can sense the effect of this shift in orientation in popular discourse. There is, for example, a Chinese saying which states that many of the products currently being marketed as AI involve more *rengong* (人工), manual labour, than *zhineng* (智能), intelligence (e.g. many ‘AI-enabled technologies’ currently rely on armies of human workers to manually code data and process information instead of using machine-learning algorithms).³ Such playful language is deeply revealing. It shows how the concept of *rengong zhineng* in Chinese is intrinsically centred on the human.

Chinese AI should be approached as a cultural object, one that is shaped by cross-cultural exchange and which has, over time, been imbued with layers of meaning. Here, I follow the work of Lydia Liu who, in her seminal book *Translingual Practice*, showed that when modern Western concepts were first translated into Chinese, they were reinvented within the local social and cultural context of China.⁴ Translation is not simply the act of mapping an idea from the dictionary of one language onto an equivalent concept in the dictionary of another; rather, it is a creative process in which cultural objects are transmitted, received, and remade anew within different contexts. Therefore, instead of attempting to compare and contrast ideal types of Chinese and Western conceptions of AI (comparisons which too often overemphasise differences and create polarising categorisations), let us view AI through the lens of cultural exchange, examining how the concept has been ‘co-authored’ through time.

AI from a Marxist Perspective

The study of AI began to take root in China during a period of radical transition. The first national AI conference was convened in 1979, the same year that the Chinese Communist Party took tentative steps toward market-oriented reforms and the liberalisation of the Chinese economy. It was only three years prior to this, with the passing of Chairman Mao, that the Great

Proletarian Cultural Revolution—a decade of violence that saw the closing of universities, the suspension of academic journals, and the widespread persecution of intellectuals and scholars—had finally drawn to a close. Just two years had passed since universities had been once again permitted to hold entrance exams, accept new students, and begin training a new generation of scientists and engineers to one day replace China’s ageing academics. It would still be another two years before the Gang of Four, the four deposed leaders (including Mao Zedong’s widow, Jiang Qing) were formally tried and sentenced by the Supreme People’s Court of China for fomenting anti-intellectual violence.

Like many academic disciplines during this period of Chinese history, the field of AI initially comprised efforts to synthesise, absorb, and reapply new research being produced outside of China. After the cancellation of subscriptions to foreign academic journals in 1966 and the subsequent suspension of domestic journals, Chinese academics had an entire decade of lost information to catch up on. In the late 1970s, recently reopened Chinese journals began publishing review articles, most notably Chen Bu’s ‘The Philosophical Discussion of Artificial Intelligence’ and Tong Tianxiang’s ‘On the Problem of Machine Thinking’, which introduced into China key scientific advancements in the field of AI being made in the West.⁵ In the early 1980s, the publisher Science Press (*kexue chubanshe* , 科学出版社) translated into Chinese and republished recent textbooks such as Patrick Winston’s *Artificial Intelligence* and Nils J. Nilsson’s *Principles of Artificial Intelligence*.⁶

Such community-building efforts triggered an explosion of activity in the field. In October 1980, the editorial board of the *Journal of Dialectics of Nature* (*ziran bianzhengfa tongxun*, 自然辩证法通讯), an academic journal published by the Chinese Academy of Science, convened the first annual National Symposium on Artificial Intelligence (*quanguo rengong zhineng xueshu taolunhui*, 全国人工智能学术讨论会) in Beijing; the conference gathered esteemed scholars from across China as well as from abroad, including the Turing Award recipient and Nobel laureate Herbert A. Simon, who delivered a keynote speech on ‘The History of the Development of Artificial Intelligence’.⁷ The following September, the second National Symposium on Artificial Intelligence, held in Changsha, was attended by more than three hundred experts, including foreign scholars from Germany. At the conference, the organisers announced the creation of the Chinese

Association for Artificial Intelligence (CAAI)—still the largest AI association in China today.⁸ That same year, China sent delegates to the Seventh International Joint Conference on Artificial Intelligence in Canada as a means of building stronger international connections in the burgeoning discipline. In 1982, CAAI launched the *Artificial Intelligence Journal* (人工智能学报), a quarterly journal on the state of Chinese AI; the first four issues featured wide-ranging articles on original research by Chinese scholars, some of which were even written in English.⁹ And so it was that the field of Chinese AI began to take shape.

This sudden burst of scholarly interest in and institutional support for AI research can be best understood against the backdrop of a technocratic turn in Mainland China. Throughout the 1950s and early '60s, Chinese philosophers, mathematicians, and political theorists were fascinated by the scientific advances in mathematics and machine computation that were happening in the West, particularly in the area of cybernetics—a multidisciplinary field concerned with circular feedback mechanisms in complex systems. Many were drawn to the work of the American mathematician and originator of cybernetics, Norbert Wiener, whose seminal text *Cybernetics: Or Control and Communication in the Animal and the Machine*, had been translated into Chinese by Chen Bu, a professor of mathematics and philosophy and the founding father of Chinese AI.¹⁰ While research into cybernetics would fall dormant in the anti-expert climate of the Cultural Revolution, it would find new life and governmental support under the Deng administration. Most famously (or infamously), China's 'One Child Policy' was envisioned by a rocket scientist who applied cybernetic models to demographics.¹¹

Chinese AI, as it manifested in the early 1980s, owed much to this earlier cybernetic tradition. Like cybernetics, it would be conceived as a wide-ranging and multidisciplinary pursuit. Chinese scholars called for the study of AI to be situated within a broader 'Intelligence Science', an imagined field that would place mathematics, computer science, and cognitive science into direct dialogue with the social sciences and philosophy.¹² This multidisciplinary aspiration was reflected in the composition of scholars at early AI symposia. For example, in the second National Symposium on Artificial Intelligence only about a quarter of total participants specialised in computer science; the rest had backgrounds in fields as diverse as applied mathematics, engineering, medicine, and philosophy. Indeed, the second-

largest contingent of scholars in attendance were philosophers of the dialectics of nature.¹³

This cross-disciplinary pollination bore rare fruit, which can be seen most clearly in the application of Marxism-Leninism-Mao Zedong Thought to the framing of Chinese AI. At this particular moment in history, Mainland Chinese scholars were steeped in decades of political learning; through required readings of Marx, Lenin, and Mao, and compulsory participation in weekly study sessions, every learned person had developed an intimate knowledge of political economic texts and theories of socialism. Many went on to apply these lenses to the analysis of AI.

Take for example the opening article of the inaugural issue of *Artificial Intelligence Journal*, in which Dai Shanren, an automation expert and affiliate of the Chinese Academy of Science, used Marx's theorisation of human-machine relations to articulate the place of artificial intelligence in the unfolding of human history. Dai began by quoting the following provocative passage from the *Grundrisse*:

Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry; natural material—transformed into organs of the human will over nature, or of human participation in nature. They are organs of the human brain, created by the human hand; the power of knowledge, objectified.¹⁴

Building on this idea from Marx, Dai argued that artificial intelligence represented the more perfect objectification of human intelligence, as well as the next stage in the co-evolution of man and machine. While previous generations of technologies had incrementally emancipated humans from physical labour, artificial intelligence would, Dai contended, emancipate humans from intellectual work.¹⁵ Dai then introduced another quotation from Mao Zedong's seminal text *On Practice* to link the development of AI to the realisation of communism:

The struggle of the proletariat and the revolutionary people to change the world comprises the fulfilment of the following tasks: to change the objective world and, at the same time, their own subjective world—to change their cognitive ability and change the relations between the subjective and the objective world. [...] The epoch of world communism will be reached when all mankind voluntarily and consciously changes itself and the world.¹⁶

AI, Dai continued, would become an ever more powerful tool that humans could use to transform their objective world. Moreover, the concomitant development of 'intelligence science' would deepen human self-understanding and promote a transformation of the relationship between the

objective and the subjective worlds. ‘From this perspective’, Dai wrote in closing, ‘artificial intelligence and intelligence science are intertwined with the cause of communism!’¹⁷

At the same time as Chinese scholars articulated the linkages between AI and communism, they also endeavoured to consolidate power by aligning themselves more closely with the interests of the state. In his keynote speech delivered at the launch of the Chinese Association for Artificial Intelligence (CAAI), Qin Yuanxun, a Harvard-educated mathematician and president of the association, proclaimed that the mission of the CAAI was twofold: to enforce political solidarity and to foster academic diversity.¹⁸ With implicit reference to the preceding decade, a dark time for many intellectuals who suffered political persecution, Qin reassured members of the audience that the organisation would be a safe haven. The association aimed to create an atmosphere of openness and safety in which all members could exchange views freely. ‘When scientists come to our association’, Qin said, ‘they should feel like they are returning home’. At the same time, Qin linked the mission of the CAAI with that of the Chinese Communist Party. He emphasised that the development of AI should happen under the leadership of the Party and should directly contribute to the ‘Four Modernisations’ and the ‘Revitalisation of China’.¹⁹

By retracing the emergence of Chinese AI and resituating it within its particular historical context, we are able to partially reconstruct the global forces that shaped it. As historical texts reveal, Chinese AI was born of a particular historical moment—a crossroads in time where three decades of socialist past intersected with a globalising present. From its inception, Chinese AI was shaped by the political economy of the Maoist era as scholars who had been immersed in Marxism-Leninism-Mao Zedong Thought brought these revolutionary ideologies to bear upon the virgin philosophies of AI. At the same time, Chinese AI was also enmeshed in global forces. The field was built atop the intellectual foundations of Western scholarship, and several of the pioneering scientists who contributed to the first publications on AI in China had received their education in the West before 1949. This confluence of nationalist and globalist forces would continue to shape the development of Chinese AI for decades to come.

The Future is Black

In a recent episode of *Qipashuo* (奇葩说), a popular Chinese debate show, contestants were presented with the following prompt: ‘If there existed a “black technology” that would enable a person to trade a portion of their life for money, ought we collectively permit it?’²⁰ Both teams—the one arguing in favour of this hypothetical proposition and the other against—presented wide-ranging expositions rooted in philosophy, ethics, economics, and personal experience. After the rounds of debate were over, and members of the audience had cast their vote for whichever team they felt presented the most persuasive case, Ma Dong, the host and producer of the show, cleared his throat and offered a concluding thought:

Was there ever a single technology in human history that was later proven to be unambiguously or wholly harmful? Based on my limited knowledge, I cannot think of any. Black technologies, or any new technologies, always provide this world with incremental [gains]. It is never a zero-sum game. A new thing appears—and it does not necessarily lead to me having more and you having less, nor you having more and me having less. Most likely, it will end up bringing me some benefit, without causing you to lose anything. *That is ‘technology’—it is a game where everyone wins.*

To a non-Mandarin-speaker, Ma Dong’s sanguine assessment of technological progress might sound naive, even alien. In English the term ‘black technology’ evokes images of digital markets for untraceable transactions, omnipresent control systems, and other dystopic technologies placed in the service of immoral ends. But in the Sinosphere (the linguistic space of Chinese-language discourse), ‘black technology’ is a concept with overwhelmingly positive connotations. First popularised around 2016, the year that AlphaGo defeated Go master Lee Sedol in the legendary human-versus-machine game, the term refers to those transformative technologies—AI foremost among them—that are believed to hold the potential to radically reshape society in collectively desired ways. As the title of one article published in *Technode* put it succinctly, ‘There’s Nothing Dark or Evil About “Black Technology” [Lost In Translation]’.²¹

In order to make sense of this evocative term and its counterintuitive associations, it is helpful to explore how ‘black technology’ was introduced into, and reinvented within, the Chinese cultural context. The phrase first appeared in Japanese as *burakku tekunoroji*, ブラックテクノロジー, a Romanji rendering of the English words ‘black’ and ‘technology’. This compound was coined by Shoji Gatoh, author of *Full Metal Panic!*, a serial light novel and anime series.²² In the fictional world of *Full Metal Panic!*, *burakku tekunoroji* refers to a class of technologies so advanced that they

exceed present human comprehension. These include both futuristic forms of real-world technologies such as artificial intelligence, and mythical ones such as the ‘Fairy’s Eye’ and ‘Electronic Conceal System’.²³

Gatoh juxtaposes *burakku tekunoroji* with the term *haiteku*, ハイテク, from the English ‘high-tech’, to distinguish it from ordinary technologies that exist at or near the edge of the current technological frontier. *Haiteku* or high-tech is presentism in its orientation. In both English and Japanese, the phrase is generally invoked either in reference to the most advanced forms of technology presently available or to those technologies which have existed for many decades, but are just now beginning to find widespread application (e.g. carbon nanotubes, which were discovered in 1952, but have only recently been used to produce carbon fibre objects for mass consumption). *Burakku tekunoroji*, by contrast, shifts the frame of reference away from the present and into the future. It is used to convey the incomprehensible power of unknowable, almost mystical technologies, along with their unbounded potential for creation and destruction.

The Chinese term *heikeji* (黑科技), a direct translation of *burakku tekunoroji*, retained its Japanese progenitor’s connotations of ineffable power, but stripped away the corresponding existential concerns. As explained in the 2018 annual report of the Chinese National Linguistic Committee (an entire section of which was dedicated to explicating the meaning of ‘black technology’), the *hei* (黑, black) in *heikeji* (black technology) falls outside of any existing meaning of the term ‘black’ in modern Chinese, which ranges from ‘dark’ and ‘hidden’ to ‘illicit’ and ‘evil’. To the contrary, it signals an intensely positive outlook toward the future; *heikeji* refers to conceptual technologies with immensely transformative potential that are ‘difficult to realise at the present moment but could be realised in the future’.²⁴

Heikeji quickly assumed a prominent place in Chinese popular discourse. In 2017, the *Chinese International Big Data Expo* proudly released its ‘Top Ten Black Technologies’, a ranked list of cutting-edge innovations that were helping the state ‘build stronger, more intelligent life’.²⁵ The term was soon coopted by leading tech companies for futuristic product branding. In the advertising campaigns of Xiaomi (小米), the largest producer of smartphones and electronics in China, the firm characterised several of its flagship products as ‘black technologies’. During one especially memorable product launch in 2016, the founder and CEO of Xiaomi, Lei Jun, stood in

front of a black screen upon which three massive characters were projected—*hei* 黑, *ke* 科, and *ji* 技. The idea quickly spread across the Sinosphere. For example, Singtel (Singapore Telecommunications Limited) started curating its own annual list of black technologies coming to market and emphasising how the lightning-fast telecommunication services it provides would be indispensable for the rolling out of these innovations.²⁶ By 2018, there were more than 360,000 recorded mentions of *heikeji* in Sinophone media per day.²⁷

In this translingual odyssey—from *burakku tekunoroji* to *heikeji* to black technology—each instance of translation was an act of reinvention which imbued ‘black technology’ with new meaning. This term, which once evoked otherworldly imaginaries, has become increasingly enveloped by the mundane present. As more and more commercial applications claim the label of black technology, the magic of the term will continue to fade. Perhaps, in the not-so-distant future, people might once more feel the need to reach into the realm of science fiction and find another term to reignite excitement in technologies that remain out of reach yet tantalisingly close.

Grounding AI

In July 2020, at the third annual World AI Conference in Shanghai, Jack Ma and Elon Musk were invited back to continue their public discussion on the future of AI. This time, however, because of the raging global pandemic, Ma appeared—with the help of AI technology—in hologram form. In his speech, he adopted a noticeably more sombre tone. He contended that while recent advances in AI were very promising and were beginning to unlock new levels of wealth and power, those realised gains were not being distributed equitably. ‘Today, we have unprecedented resources and wealth and an ever more powerful ability to process information and counteract risks’, he remarked, but added that these resources ‘have been used to produce chasms and enlarge differences’. This, he argued, was because humanity ‘still lacks the wisdom to collaborate in sharing resources and to communicate and exchange [...] among different cultures’.²⁸

Ma’s solemn reflections on technological inequality stood in sharp contrast to the unbridled positivism he had expressed in his conversation with Musk a year earlier. Perhaps it was because he was now speaking in a more official capacity as the co-chair of the UN High-Level Panel on

Digital Cooperation. Or perhaps new global challenges had tempered his enthusiasm. As the COVID-19 pandemic ripped through societies, derailed economies, and claimed the lives of millions, it became evident that technological advancements alone could not save humanity in the face of complex and fast-moving crises. Although there were notable efforts on the part of scientists, firms, and governments to deploy AI-enabled technologies in the development of novel tools to track and contain the spread of the virus, such efforts ultimately stumbled as a result of people's mistrust of each other, of governments, and of global institutions. Central to Ma's reflection was a newfound understanding: it is humanity, rather than technology, that is at the heart of grand challenges and their—potentially equally grand—solutions.

Did the social and technological shifts associated with the global pandemic fundamentally alter Chinese social conceptions of AI? The answer is almost certainly yes. But it is perhaps too early to say how exactly. In 2021 local governments working in collaboration with private companies continued to generate headlines by proactively deploying AI technologies to monitor and control their populations in their efforts to stave off the pandemic.²⁹ At the same time, leading Chinese tech firms came under increasing governmental scrutiny for their data management and sharing practices.³⁰ How these events will ultimately play out in the realm of ideas remains to be seen. What we can be sure of, though, is that as China continues to advance the global development of AI, the concept of Chinese AI will continue to be reshaped by global forces and imbued with new layers of meaning.

Chinese AI was born of a particular historical moment in China's post-socialist transition, when the nation was taking tentative steps towards reintegrating with the global economy. The first generation of Chinese AI scholars dreamed of building an 'Intelligence Science' which, on the one hand, would apply state-sponsored ideologies to understanding new technologies and their relationship with humans but, on the other hand, would also serve as a bridge for intellectual exchanges with the West. At the heart of this discipline was the concept of *rengong zhineng* ('humanmade intelligence'), a term originally imported from Japanese but which assumed unique cultural significance in China. Reborn within a Marxist philosophical framework, *rengong zhineng* placed humanity at the heart of AI and viewed its rise as the next inevitable stage of human-machine

evolution. Such a philosophical position continues to inform the concept of Chinese AI today. More recently, imported cultural products from Japan have continued to shape Sinophone discourse. Bleeding-edge technologies such as AI are now described as ‘black technologies’ (*heikeji*), a term that was translated into Chinese by fans of Japanese anime and has since assumed a prominent place in popular AI imaginaries. If there is something to be learned from this exploration of the evolutionary trajectories of these two important terms, it might be that taking the time to understand the multifaceted, sometimes contradictory, political, and philosophical influences that constitute our concepts is an indispensable step on the way to forging a true intercultural dialogue on AI.

Notes

1. A full recording of the debate can be found at <https://www.youtube.com/watch?v=f3lUEnMaiAU>.
2. D. Dawkins, “‘Where Are The Aliens?’ Jack Ma and Elon Musk’s Weird Debate on Space, AI and the Future of Work”, *Forbes*, 29 August 2019, <https://www.forbes.com/sites/daviddawkins/2019/08/29/where-are-the-aliens-jack-ma-and-elon-musks-weird-debate-on-space-ai-and-the-future-of-work/>; S. Dash, ‘Elon Musk and Jack Ma Fight About AI and Mars, but Agree that “Love is the Answer”’, *Business Insider*, 29 August 2019, <https://www.businessinsider.in/elon-musk-and-jack-ma-fight-about-ai-and-mars-but-agree-that-love-is-the-answer/articleshow/70892426.cms>.
3. During my fieldwork in China I have often heard industry experts invoke the saying ‘*rengong zhineng doushi rengong, meiyou shenme zhineng* [人工智能都是人工，没有什么智能]’, which translates into ‘Artificial Intelligence [*rengong zhineng*] is all human labour [*rengong*] and no intelligence [*zhineng*]’.
4. Liu, Lydia H. (刘禾), *Translingual Practice: Literature, National Culture, and Translated Modernity—China, 1900–1937* (Redwood City, CA: Stanford University Press, 1995), 46.
5. Chen Bu (陈步), ‘Philosophical Discussion of Artificial Intelligence’ (人工智能问题的哲学探讨), *Philosophical Studies* (哲学研究) 11, 1978. Tong Tianxiang (童天湘), ‘On the Problem of Machine Thinking—A

Review of Historical Debates Abroad’ (关于《机器思维》的问题—国外长期争论情况的综述), *Foreign Social Sciences* (国外社会科学) 4, 15–24.

6. Patrick Henry Winston was a professor of computer science in MIT and founder of CSAIL lab. Both Winston’s and Nilsson’s textbooks were published in Chinese translation in 1983.

7. Herbert A. Simon was a computer scientist, political economist, and cognitive scientist among other things. He received the Nobel Prize for Economics (1978), the Turing Award (1975), and is considered one of the founders of AI. Given his academic connection with China and his belief that ‘science knows no geographic boundaries’, Carnegie Mellon established a scholarship in his name to support visiting Chinese scholars.

8. The Chinese Association for Artificial Intelligence (中国人工智能学会), <https://www.caaai.cn/>.

9. Articles include (but are not limited to): ‘The Current State of Development of Artificial Intelligence (人工智能的发展现状)’ in Chinese by Zhang Bo (张钹), Tsinghua University; ‘Philosophical Investigation of the Problem of Artificial Intelligence’ in English by Chen Po (陈步), Chinese Academy of Social Sciences, and ‘Realisation of Parallel Processing of Both Numerical Calculation and Nonnumerical Application on Large Scale Computers’ in English by Liu Zunquan (刘尊全), Institute of Applied Mathematics, Chinese Academy of Sciences.

10. Chen Bu (陈步, who published under the name Chen Po) received his tertiary education in Chongqing Central University. He taught at Taiwan University before returning to the Mainland in 1949. He translated two of Wiener’s key works: *Cybernetics: Or Control and Communication in the Animal and the Machine* (1948) and *The Human Use of Human Beings* (1950). They were published in China as 《控制论》, 科学出版社 (1948) and 《人有人的用处: 控制论与社会》, 商务印书馆出版 (1978). In Chinese, cybernetics was rendered as ‘control theory’—*kongzhilun* (控制论)—whereas in English, cybernetics specifically refers to control theory applied to complex systems.

11. See S. Greenhalgh, *Just One Child: Science and Policy in Deng’s China* (Berkeley, CA: University of California Press, 2008).

12. See for example Issue 1 of *The Artificial Intelligence Academic Report* (人工智能学报), published by the Central Southern China Branch of the Chinese Association of Artificial Intelligence (中国人工智能学会中南分

会) and the Department of Computer Science at Hunan University in March 1982.

[13.](#) See, Qin Yuanxun (秦元勋), ‘Opening Speech at the Inaugural Meeting of the Chinese Association of Artificial Intelligence’ (中国人工智能学会成立大会上所致的开幕词), *Artificial Intelligence Journal* 2: 1–2.

[14.](#) K. Marx, *Grundrisse*, tr. M. Nicolaus (London: Penguin, 1973), 625. The Chinese rendering of the quotation was: 自然并没有制造出任何机器，火车头，铁路，电报，自动纺棉机。他们都是人类工业底产物；自然的物质转变为由人类意志驾驭自然或人类在自然界里活动的器官。他们是由人类的手所创造的人类头脑底器官；都是物化的智力。

[15.](#) Dai Shanren (戴善仁), ‘A First Exploration of Intelligence Science—A Discussion of the Relationship between Artificial Intelligence and Human Intelligence’ (智能科学初探—兼论人工智能与人类智能的关系), *Artificial Intelligence Journal* 1:9 (1982).

[16.](#) Mao Zedong (毛泽东), ‘On Practice: On the Relation Between Knowledge and Practice, Between Knowing and Doing’ (实践论:论认识和实践的关系—知和行的关系), English translation from ‘Selected Works of Mao Tse-Tung’, <https://www.marxists.org/reference/archive/mao/selected-works/volume-1/mswv1_16.htm>.

[17.](#) Dai Shanren, ‘A First Exploration of Intelligence Science’, 9.

[18.](#) Qin Yuanxun (秦元勋, 1923–2008) was a Chinese mathematician. He received a BA from Zhejiang University and a PhD in mathematics from Harvard. He returned to China in 1948 and made significant contributions to the nuclear project. He was persecuted during the Cultural Revolution and was sent to *laogai* (劳改, to work in a Chinese gulag). He started researching AI in 1979, founded the CAAI in 1981, and served as its president until 1987.

[19.](#) Qin Yuanxun, ‘Opening Speech at the Inaugural Meeting of the Chinese Association of Artificial Intelligence’.

[20.](#) *Qipashuo* (奇葩说) is a TV programme produced by Ma Dong (马东), founder and CEO of social network company Mewe (米未传媒). Seven seasons were aired between 2014 and 2021. The show has become a cultural phenomenon in China: it produced 1,179 trending phrases that are rated ‘top searches’ on the Chinese internet, and its viewership attained no. 1 in language-related shows and top 3 in general entertainment shows. Data from ‘Data Will Tell You: The Cultivation of Qipashuo in Seven Years’ (数

据告诉你,《奇葩说》的七年之养), 9 March 2021,

<<https://new.qq.com/omn/20210309/20210309A04XJV00.html>>.

21. Ma, April, 'There's Nothing Dark or Evil About "Black Technology" (Lost In Translation)', *Technode*, 21 September 2016,

<<https://technode.com/2016/09/21/theres-nothing-dark-evil-black-technology-lost-translation/>>.

22. *Full Metal Panic!* [フルメタル・パニック!], written by Shoji Gato and illustrated by Shiki Douji, published between 1998 and 2011.

23. In the series, *Haiteku* were created by a sub-race of humans, known as the Whispered, who are the result of scientific experimentation and whose existence is unknown to the general population. Some *Haiteku* later entered the world and became commonplace, without the civilians knowing their origins as a 'black technology'. See

<https://fullmetalpanic.fandom.com/wiki/Black_Technology>.

24. National Language Working Committee (国家语言文字工作委员会), 'Report on Chinese Linguistic Life, 2018' (中国语言生活状况报告2018), *Xinhuanet*, 30 May 2018, <http://www.xinhuanet.com/politics/2018-05/30/c_1122909806.htm>.

25. Chen Meiling, 'Top Ten Black Technologies List Revealed', *ChinaDaily*, 28 May 2017, <https://www.chinadaily.com.cn/china/2017-05/28/content_29536385.htm>.

26. 'Hi! Black Technology' (嘿! 黑科技!),

<<https://www.singtel.com/business/articles/hello-black-tech>>; 'The Robust Support Behind New Technologies' (新科技背后的坚实后盾),

<<https://www.singtel.com/business/articles/the-supporter-behind-black-technology>>.

27. National Language Working Committee, 'Report on Chinese Linguistic Life, 2018'.

28. Ye Wei (叶薇) and Ma Yaning (马亚宁), '2020 World AI Conferene.

Jack Ma: In AI era, Instead of Worrying We Need to Take Responsibility [2020世界人工智能大会 | 马云: AI时代, 与其担忧不如担当]', *Xinmin Evening News* (新民晚报), 9 July 2020,

<<https://wap.xinmin.cn/content/31762797.html>>.

29. F. Candelon, M. Gombeaud, and S. Khodabandeh, 'China's Response to COVID Showed the World How to Make the Most of A.I.', *Fortune*, 4 June 2021, <<https://fortune.com/2021/06/04/covid-ai-china-artificial-intelligence-public-health-research/>>.

30. Eva Dou and Pei-Lin Wu, 'China Fines Didi \$1.2 Billion for Breaking Data-security Laws', *Washington Post*, 21 July 2022, <<https://www.washingtonpost.com/world/2022/07/21/china-didi-fine-data-security/>>; Raymond Zhong, 'In Halting Ant's IPO, China Sends a Warning to Business', *The New York Times*, 6 November 2020, <<https://www.nytimes.com/2020/11/06/technology/china-ant-group-ipo.html>>.