



# “This is China’s Sputnik Moment”: The Politics and Poetics of Artificial Intelligence

Bingchun Meng

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# "THIS IS CHINA'S SPUTNIK MOMENT": THE POLITICS AND POETICS OF ARTIFICIAL INTELLIGENCE

*Bingchun Meng*

Department of Media and Communications, London School of Economics,  
London, UK

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**Artificial intelligence**  
**China**  
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**political economy**  
**social imaginary**  
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*This essay unpacks the politics and poetics of artificial intelligence in contemporary China by drawing on textual data from policy documents and news reports, as well as from ethnographic data collected through fieldwork in Shenzhen and Guiyang. Drawing on this empirical study, I argue that on the one hand, there is convergence between the logic of transnational capital and that of the developmentalist state at the discursive level, while on the other hand, the politics of AI unfolds unevenly at the conjuncture of state policy, political economy of digital technologies, and the actions of key stakeholders.*

In his 2018 book *AI Superpowers*, Kai-fu Lee, one of the most prominent figures in the Chinese Internet sector, argues that China is on course to become the next global leader in artificial intelligence (AI). Trained as a

computer scientist in the US and having worked at Apple, Microsoft and Google, Kai-fu Lee now heads the venture capital firm Sinovation, a \$1.8 billion dual-currency fund that also invests in technology start-ups in the US. Lee is a major opinion leader on Chinese social media, having garnered more than fifty million followers on Sina Weibo. He is without doubt a key elite voice shaping the social imaginary of technology in the Chinese context and beyond.

Lee starts his new book with an intriguing analogy. Assigning great symbolic significance to the 2017 victory of the computer programme AlphaGo over the 19-year-old Chinese Go player Ke Jie, Lee calls this event “China’s Sputnik moment.” He believes that, just as the launch of the first space satellite by the Soviet Union six decades ago had a profound impact on the American psyche and on US government policy, when “the world’s most intelligent machine,” built by Google DeepMind, beat the world’s number-one human player in an ancient strategy game invented 2,500 years ago, this was a wake-up call for the Chinese. The event is said to have triggered an “artificial intelligence fever” in China, with investors, entrepreneurs and government officials “ramping up AI investment, research, and entrepreneurship on a historic scale” (Lee 2018).

Kai-fu Lee is not the only one championing AI as the strategic priority for China’s economic growth and technological advancement. In July 2017 the Chinese State Council released a document resolving to position China by 2030 as the world’s pre-eminent expert of both research into and application of artificial intelligence. Chinese AI companies have been extremely successful in raising funds from both domestic and overseas investors, leading to the launch of an increasing number of so-called unicorns (privately held start-ups with a valuation of over \$1 billion). The most recent sensation came from SenseTime, a Chinese company specializing in AI and facial recognition that was able to raise \$1.2 billion in the first six months of 2018 and is now valued at more than \$4.5 billion.

A seemingly perfect alliance is shaping up between venture capitalists, technology companies and the Chinese government to inscribe layers upon layers of significance into AI as the technology of the future. What is the historical lineage of this imagined future? What are the key components of a better life sustained by intelligent machines? Why has AI acquired such strategic significance at the current political-economic conjuncture? What are some of the discrepancies and incongruences between universalist claims and local practices in relation to this new sector? These are the questions that drive the inquiry in this essay, which unpacks the politics and poetics of AI (Larkin 2013) in China within the current geopolitical and socioeconomic context. Instead of following the cutting-edge development or projecting into the future, I am interested in examining the discursive construction (poetics) as



well as material arrangements (politics) of AI industries as historical and political configurations.

In the following, I first situate this study within broader academic debates on artificial intelligence as social-technical system by drawing on social histories of technology, infrastructure studies and a postcolonial perspective on digital technologies. I then delineate the poetics of AI in contemporary China, using as a historical reference point the much less visible discourse around the same topic at the beginning of the Reform Era. The ebbs and flows of discursive practices that simultaneously define and mystify AI are intertwined with the changing role and developmental goals of the post-socialist Chinese state. A critical discourse analysis was conducted of policy documents and news articles about artificial intelligence published in recent years. The policy documents were all published by the State Council and news reports were retrieved from the archive of the *People’s Daily*, the central Party-organ newspaper.

After teasing out some of the main political tensions embedded in the current social imaginaries of an AI-led future of prosperity and general welfare, I examine how these tensions unfold in an uneven and contingent manner on the ground. I compare and contrast the development of the AI sector in Shenzhen, a coastal city epitomizing economic liberalization, and Guiyang, capital city of one of the least developed hinterland provinces located in the mountainous region of Southwest China. The second set of empirical materials came from two recent field trips, to Shenzhen and Guiyang, during which I made site visits and conducted interviews with technologists and entrepreneurs working in the AI sector as well as with government officials.

### **Techno-utopian Fantasies and the desire for modernity**

From a technological point of view, AI is a broad umbrella term whose very connotations are still contested. Some define it as “the exciting new effort to make computers think ... machines with minds, in the full and literal sense” (Haugeland 1985, 6). Others call it “the study of how to make computers do things at which, at the moment, people are better” (Rich and Knight 1991, 9). A more comprehensive definition combines both thinking and doing: “artificial intelligence, broadly (and somewhat circularly) defined, is concerned with intelligent behaviour in artefacts. Intelligent behaviour, in turn, involves perception, reasoning, learning, communicating, and acting in complex environments” (Nilsson 1998, 12). Research into and development of intelligent machines will involve many more stakeholders outside the science community. In fact, ever since artificial intelligence was

established as an interdisciplinary research area in the 1950s, the field has been going through cycles of hype and disappointment. Often the episodic optimism would be followed by periods of so-called AI Winter, with reduced interest and funding cuts from both government and venture capitalists. This in itself suggests that, more often than not, the development of AI is shaped by a host of social factors that go beyond the teleology of technological progress.

The ascendance of new hopes and expectations in recent decades has to do with the significant improvement of computational power achieved through hardware development, with increasingly sophisticated algorithmic modeling, as well as with the availability of Big Data that feed into the training of algorithms as “raw materials” (LeCun, Bengio, and Hinton 2015). But the recent promotion of AI by many national governments clearly uses this umbrella term to conveniently identify a fundamental driver of future growth and development. From Germany’s *Industries 4.0* White Paper, which foregrounds the role of “intelligent ICT-based machines, systems and networks” (Schwab 2015), to the *National Artificial Intelligence Research and Development Strategic Plan* released by the US White House in 2019 (National Science and Technology Council 2019); from a series of policy documents on artificial intelligence, algorithm-based decision-making and industrial strategy published between 2016 and 2021 by the UK government (Office for Artificial Intelligence 2021) to the *Artificial Intelligence Technology Strategy* published by the Japanese government in March 2017 (Strategic Council for AI Technology 2017), the political and economic stakes of artificial intelligence are piling up. AI is no longer perceived in terms of technological artefacts, but of a networked decision-making mechanism underpinning production in various sectors.

It is this combination of aspirationalism and ambivalence that renders the poetics of AI particularly potent. The fierce enthusiasm for an AI-enabled good life coupled with expansive but vague understanding of relevant technologies allows the futuristic scenarios to captivate public attention. In other words, what I mean by poetics here is not so much the aesthetic dimension of AI narratives, but those narratives as socially embedded imaginaries. With the contribution of various stakeholders ranging from venture capitalists to local government officials, contemporary discourses about AI “emerge out of and store within them forms of desire and fantasy and can take on fetish-like aspects” (Larkin 2013, 329). Similar to what Marxist scholars have written about commodity fetishism, such “fetish-like aspects”, on the one hand, are product and embodiment of material historical forces, while, on the other hand, they “enter into our unconscious and hold sway over the imagination” (333). Discourse contributes to the formation of subjects through the mobilization of affect and of the senses of desire, pride and frustration – feelings that can be deeply political. The Sputnik analogy deployed



by Kai-fu Lee, for example, carries with it complicated emotional baggage resulting from China’s so-called Century of Humiliation and the perennial anxiety over catching up with the West.

Taking inspiration from anthropological research on infrastructure (Anand, Gupta, and Appel 2018), politics is understood here in terms not only of policy initiatives and institutional rules shaping the allocation of resources, but also of activities and practices aimed at either implementing policy or circumventing rules. Larkin defines infrastructure as “a totality of both technical and cultural systems that create institutionalized structures whereby goods of all sorts circulate, connecting and binding people into collectivities” (2008, 6). This is very much in line with how national governments from all over the world are now imagining artificial intelligence to support a social-technical system that is integral to the functioning of contemporary societies (Edwards 2003, 187). More often than not, forms of political rationality underline technological projects and give rise to an “apparatus of governmentality” (Larkin 2013, 328). This apparatus, however, is bound to exhibit disjuncture and generate frictions (Tsing 2004). Just because policy-makers, financial elites and technological entrepreneurs are making AI their strategic priority, it does not necessarily mean that the politics of this new initiative will unfold evenly across the nation. In a country as large as China, where regional differences are significant on multiple fronts, there is little point in discussing AI development in a monolithic way, regardless of how unified the policy agenda appears to be.

Based on the aforementioned conceptualization of poetics and politics, I highlight in this essay the mutual constitution between the discursive and the social material dimensions of digital technologies by looking into the social imaginaries of AI in China. As “the common understanding that makes possible common practices and a widely shared sense of legitimacy” (Taylor 2002, 106), social imaginaries are the terrain of historical layering and political contestation. First and foremost, inherent to aspirations toward an AI-enabled future are evaluations of the past and geopolitical tensions of the present. Like infrastructures, artificial intelligence represents “promises made at the present about our future,” although such promises are not always fulfilled and may often be suspended (Appel, Anand, and Gupta 2018, 26). What underpinned the original Sputnik moment was the intense rivalry between two political systems, both of which were trying to demonstrate their superiority through winning the technological race. It is hardly surprising, then, at a time when speculations about a New Cold War are rife, this historical episode is invoked once again.

During the Cold War period, alongside the development of APARNET, the precursor of the Internet, a “hegemony of high-tech prophecies” (Barbrook 2007, 10) was established in America through the concerted efforts of the US military, scientists, technologists and public intellectuals (Edwards

1997; Rid 2016). The so-called “high-tech prophecies” had three interlinking dimensions. First, leading social scientists such as Walt Rostow and Daniel Bell, whom Barbrook dubbed the Cold-War Left due to their familiarity with Marxism, argued that the advancement of information technology had ushered in a new model of economic growth represented by the US. Second, the ICT-led post-industrial development model has sought not only to guarantee prosperity, but also to ensure individual liberty. Elite intellectuals and artists in post-war America were proactively using new media and technology to build what Turner (2013) calls “the democratic surround,” which in turn brought out the radical individualism of the 1960s counterculture. Eventually, what the Cold-War Left successfully put forward was an imaginary future of an information society marked by abundance and freedom, and it was this future that trumped Soviet-style socialism.

Ever since the start of Reform and Opening Up in China, enormous expectations have been placed on information technology and digital innovation as the driving force behind economic growth, the ultimate benchmark of modernization and, most crucially, the pathway towards a *good life*. Often dubbed the “New Era,” the decade immediately following the Cultural Revolution was full of hopes for a bright future that would make a clean break with the over-politicized Maoist period. “Yet as the possibilities for alternative modes of modernity provided by socialist practices were evaporating and displaced by capitalist modernity, the future would lie somewhere else, to which technology would play the single most important role” (Liu 2019, 31). In particular, it is information technology in the broadest sense that is expected to stitch together “the renewed and reconstructed centennial dream of modernization, technological nationalism, and depoliticized worship of scientific and engineering knowledge in China” (Wu and Yun 2018, 15). Tracing the discursive trajectory of mainstream news reports about AI from the 1980s to today, we can note a discernible shift in tone, however, from that of a post-socialist country playing catch-up to that of a China striving to remain at the cutting edge of technological innovation. In a parallel manner, while the US is still the unquestionable front runner in AI-related technologies, China is increasingly positioning itself as a competitor rather than a mere emulator.

Second, the poetics of AI intersect with the political economy of digital technologies at both national and local levels. While neoliberal austerity regimes in the global North have withdrawn public funds from building and maintaining infrastructure (Appel, Anand, and Gupta 2018, 5), the Chinese state has invested heavily in building roads, railways, telecommunication networks, and other large infrastructure projects that are central to the reproduction and legitimation of state power (Oakes 2019). The recent push from the very top of central government to develop AI technologies is a continuation of this political rationale oriented toward modernity and



prosperity. In the Chinese context, as in that of many postcolonial countries, digital networks are sites where the logic of global capitalism collides with that of the developmentalist state. Easterling considers infrastructure space “as a site of multiple, overlapping, or nested forms of sovereignty, where domestic and transnational jurisdictions collide ... a medium of what might be called extrastatecraft – a portmanteau describing the often-undisclosed activities outside of, in addition to, and sometimes even in partnership with statecraft” (2014, 15). Exactly how such dynamics are played out is contingent on the politics of the local territory and on negotiations between different stakeholders.

The former Soviet Union’s failed attempt at building nationwide computer networks helps to illustrate how politics at different levels shapes the development of complex technical systems. In his book tracing the history of the Soviet Internet during the thirty-year period from 1959 to 1989, Peters (2016) notes that, despite top-level scientists and patriotic incentives, the Soviet network failed to materialize due to unregulated competition among self-interested institutions and bureaucrats. Through a comparison with the American APARNET, which was premised on state subsidy and a collaborative research environment, Peters makes the counter-intuitive yet compelling argument that the American Internet took off because the capitalists acted like socialists, while the Soviet one stumbled because the socialists behaved like capitalists. In other words, the technological advancement that is celebrated for its decentralizing features was actually a beneficiary of centralized planning.

Centralized planning is only one of the many factors shaping the contours of AI development in contemporary China. In a country that not only covers immense territory but is also characterized by a significant gap in economic prosperity between the coastal areas and the hinterland, the historicity of AI imaginaries encounters the spatiality of regional stratification. For the likes of Kai-fu Lee, when conceiving AI-related projects, Silicon Valley and Wall Street are the default *centres* of cutting-edge innovation and transnational capital. For entrepreneurs and government officials in Guiyang, however, it is places like Shenzhen or Beijing that serve as the reference points for measuring how much their region is *lagging behind*. As a result, the purpose and the contours of AI development are imagined differently in these places – something only to be uncovered by making observations on the ground.

## **An imaginary future powered by AI**

AI was already part of the public discourse of modernization and the information society in the 1980s. Using *artificial intelligence* as the keyword to



perform a search in the digital archive of the *People's Daily*, a total of fifteen results were returned for the time period 1980–1989. In the 1990s and 2000s there was little explicit reference to artificial intelligence *per se*, but enthusiasm towards digital technology and information systems in general continued. The noticeable surge occurred around 2016, with more than sixty articles published every year on this topic in the past five years. In addition to the significant increase in prominence suggested by the number of reports in the most important Party-organ newspaper, the topic of AI is also framed differently in the coverage from the two periods. I examine these differences here on the basis of three key themes: (1) What does artificial intelligence entail and what can it achieve? (2) What is the priority for China in relation to the AI sector? (3) What are the immediate objectives and the broader social goals of the development of AI technologies in China?

The connotations of artificial intelligence are often depicted vaguely in news articles mentioning the term from the 1980s. More often than not, the imaginary of AI is intertwined with that of a future information society supported by smart machines. An article published in the *People's Daily* on 29 February 1984 anticipates “the outcomes of world technological revolution by 2000,” including breakthroughs in medicine, bio-technology, food and agriculture, telecommunications, and material science. Interestingly, while all the other types of technologies are discussed matter-of-factly, the last two paragraphs of the piece provide vivid details of what life could be like with the help of “electronic servants”:

We are expecting the first generation of domestic robots. There will be smart vacuum cleaners that can work independently without crashing into furniture and can poke their heads into any corners that need to be cleaned. The domestic robots may also include talking ovens that will let you know when a meal is ready. A lawn mower will be able to walk out of the shed by itself, do what needs to be done, and then go back to the shed.

There will be completely roboticized houses with an electronic system that controls heating, electricity, fire alarm, home security and all kinds of household appliances. You can even programme everything in the evening so that by the time you get up at seven o'clock the next morning, there is hot water ready for you to take a shower, before being served breakfast by a robot helper. (*People's Daily*, 29 February 1984)

Although this scenario did not come true by the turn of the millennium, it matches perfectly well with the marketing message of “smart” home devices as we know them today. Because robot helpers were not yet mass products in the 1980s, however, the emphasis was very much on the convenience brought by automation rather than on the commercial value of new technologies.



Aside from the automation of tedious jobs and the use of robots to perform simple tasks for humans, a few articles also discussed the “expert system” as the latest advance in computer technology. The expert system was formally introduced by the Stanford computer scientist Edward Feigenbaum in the 1960s and was widely considered one of the first truly successful forms of artificial intelligence software. Moving away from previous research oriented toward developing general-purpose problem solvers, Feigenbaum proposed a new approach focused on extracting knowledge from human experts in a narrowly defined area and coding this information into computable forms. Expert system proliferated in the 1980s, with two thirds of Fortune 500 companies applying the technology in their daily business operation and Japan leading the research in Fifth Generation Computer Systems (Feigenbaum and McCorduck 1983). This coincided with China’s “information craze” and the Chinese obsession with American futurologist Alvin Toffler’s *The Third Wave*, which predicted that a third wave of development driven by information and new energy would soon supersede the previous wave of industrialization (Liu 2019). Two arguments about the expert system can be seen to have prevailed in the *People’s Daily*. One was that knowledge is essentially extractable and codifiable information which can be transferred from one setting to another. An expert system comprised of a knowledge base and an inference engine therefore greatly enhances the efficiency of decision-making. Following on from this enhanced efficiency, AI contributes to the strengthening of productive forces, which in turn will reconfigure social relations in accordance with orthodox Marxist theory. In an article titled *The Rise of Artificial Intelligence*, published on 30 June 1983, the expert system is referred to as “the hottest” technology, which “many developed countries are prioritizing as key intellectual resources.” The author maintains that intelligent machines would become an extension of or substitute for human brains: “if electricity is the powerful force that could eventually bridge the gap between the urban and the rural, artificial intelligence will ultimately become the leverage to eliminate the division between physical and intellectual labour.”

Be it robot helper or expert system, China in the 1980s was looking at these AI technologies as something to aspire to, but not yet within close reach. The nation was anxious about catching up with developed countries, among which the US and Japan were the two most important reference points, with Western Europe and the Soviet Union trailing behind. There was no specific agenda for developing AI apart from prioritizing information technology in general as the strategic focus of economic modernization. With headlines like “racing toward the new millennium,” “major breakthroughs in information technology this year around the world,” “Japan making progress toward a highly advanced information society,” many reports convey a

sense of inferiority, that China had fallen far behind, as well as the urgency of moving forward.

By 2019 the sense of inferiority had receded significantly, with the US now perceived as the primary competitor rather than as one of the exemplars that China should emulate. The tone of urgency remains, but for the pursuit of a revised agenda. Aided by the exponential growth of “Big Data” that can be used for machine learning, a new wave of hopes and expectations has been on the rise since the early 2000s. Compared with the previous decades, when artificial intelligence was seen mainly as something for scientists working in the lab, the recent boom promises the ever-broader application of algorithm-based decision-making in a wide variety of industrial sectors. With an unprecedented level of resource mobilization and a strong urge to catch up on technological innovation, China is also joining the race toward superintelligence (Bostrom 2014). In September 2018 Shanghai hosted a World AI Conference with the tagline “a new era empowered by artificial intelligence.” In his congratulatory letter to the summit, Chinese President Xi Jinping emphasized that “China is committed to high-quality development, and the advancement of AI would improve the intelligent level of social-economic development, effectively strengthening public service and urban management” (Xinhua News Agency 2018). Earlier in the year, Xi had sent a similar messages to three other technology industry gatherings, including the Smart China Expo in Chongqing, the Big Data Industry Expo in Guiyang, and the Digital China Summit in Fuzhou. All four congratulatory letters essentially iterate the same core messages: (1) that data-driven digital technologies are the key driving force towards the better life that the Chinese people demand; (2) that Big Data and AI industries are evolving at a fast pace and bringing about a new vision of development; (3) that the wider application of artificial intelligence will lead to better governance in a “smart society.”

To a great extent, this is an update of the familiar trope linking technological advancement with national development and modernization (Liu 2019). In this latest rendition of an old theme, the connotations of AI have been expanded, and its status elevated, to resemble that of information infrastructure. The contemporary social imaginary of AI-enabled progress increasingly moves beyond the primary and secondary sectors of the economy to encompass various services, and even governance. Headlines in the *People’s Daily* of the past three years suggest a wide range of sectors that artificial intelligence is expected to disrupt, if not to revolutionize, including education, health care, law enforcement and criminal justice. There are reports of pilot projects where AI technologies help in delivering tailor-made teaching materials and better monitoring of students’ performance, of how a medical expert system speeds up the recording of patient information and assists in diagnosis, and of significantly improved efficiency in analysing



legal documents as a result of utilizing visual recognition and natural language-processing technologies.

The technology fetishism that Smythe (cited by Zhao 2007) noted as early as the 1970s has intensified, aided by the continuing strong presence of the Chinese state in setting the development agenda. Compared with the 1980s, however, private-sector and financial capital play a much stronger role in shaping the contours of AI research and application. From January to February 2018 the *People’s Daily* published a series of eight articles under the rubric of “high quality development and artificial intelligence,” partly in response to the State Council White Paper released in July 2017 and titled *The Agenda for Developing a New Generation of Artificial Intelligence*. The first piece, dated 10 January 2018, paints a broad picture of China’s global standing, highlighting how the country is leading innovation on many AI-related technological fronts but still lags behind the US both in high-end computer engineering talents and in the commercialization of research findings. The rest of the series drives home the ubiquity of AI by envisioning the potential integration of intelligent machines into various aspects of everyday life, including commerce, transportation, financial services, logistics, home security and medical services. Particularly noteworthy is how new spaces of consumption and new opportunities for capital investment are imagined in conjunction with a primarily developmentalist discourse. The key to taking the lead in “the era of AI Plus”<sup>1</sup> is believed to be “expediting the transformation of research outcome into business operation.” The series ends on 13 February 2018 with the pronouncement that “the future is already here, it just hasn’t been popularized”. The aspiration toward an AI-enabled “good life” remains, but now the future is much more tangible than before.

1 This phrase is modelled after the slogan “Internet Plus,” first coined by Tencent CEO Pony Ma and popularized by Chinese Premier Li Keqiang. The idea is to upgrade the overall

### **A tale of two cities: market-driven vs. State-led AI development**

economic structure through innovative integration of digital technologies/artificial intelligence into traditional sectors.

The imaginary of a high-tech-empowered good life that is almost within reach becomes frayed and variegated as we move from official discourse to local realities. Two Chinese cities, Guiyang and Shenzhen, offer contrasting snapshots of the politics of AI on the ground. Both cities prioritize technology and data industries as one of the key engines driving economic growth, but they differ in three important aspects, namely: (1) the goal and purpose of developing AI; (2) the makeup of key stakeholders; (3) the status quo of development.

In April and August 2019 I started my research with two trips to Shenzhen and Guiyang to collect information about AI industries in the two cities. In Shenzhen I visited the famous Huaqiangbei Electronic Market, two robotics

start-ups, two fairly established, medium-sized companies that offer visual recognition technologies to various types of businesses, as well as major companies such as Baidu and Huawei. One of my informants who was affiliated with the Shenzhen Open Innovation Lab, a maker space and tech start-up incubator, also introduced me to a few people working in the security industry and in financial services companies currently deploying some of the latest AI technologies. The trip to Guiyang was shorter and mainly concentrated in the newly established Gui'an New District, a state-level urban district given special economic and development support by the central government. According to the Xinhua News Agency, Gui'an New District is destined to become "the national demonstration area of China's in-land opening-up economy" by taking advantage of its cool climate, power supply and network infrastructure to advance its burgeoning data industry (Hu 2018). In the following, I can only provide snippets from each city to illustrate some of the aforementioned differences in their approach to AI research and development.

## **China's Silicon Valley**

Located on the central coast of the southern province of Guangdong, bordering on Hong Kong, Shenzhen is the poster child of China's Reform and Opening Up. The city was established in 1980 as the very first Special Economic Zone. In 1992, when the economic reform experienced setbacks due to resistance from the Hard-Left factions within the top echelons of the CCP, it was also in Shenzhen that Deng Xiaoping made his famous Southern Tour speech reaffirming the programme of reform. After the 1997 Hong Kong handover and the return of Macao to Chinese sovereignty in 1999, Shenzhen gained further strategic importance as a capital of innovation and creativity in the region. Although the land mass takes up only less than 1 percent of the country, the Guangdong-Hong Kong-Macao Greater Bay Area accounts for 12 percent of Chinese national GDP, with Shenzhen being the biggest contributor. As a high-tech hub in Southern China, Shenzhen is home to 3 million businesses, including tech giants such as Huawei, Tencent, and DJI.

I got to know Yang<sup>2</sup> at a party at the Shenzhen Open Innovation Lab. As soon as he learned about my research topic, he told me that the Electronic Market in Huaqiangbei District (HQB) was a must-see and offered to take me there. HQB is a vast area covering more than sixteen city blocks plus a few outlying buildings. Not only is this the world's largest market for gadgets, where one can find any type of electronic component imaginable, it is also a place to look for ingenious software and hardware solutions. From restoring data on an old and damaged hard drive to the huge array

<sup>2</sup> I use only part of my informants' last or first names so as to protect their anonymity.

of “shanzhai” smart phones boasting customized functions, I was impressed with the variety of services and products on offer once you step into the giant multi-story main building. As a Shenzhen local, Yang clearly takes pride in the resourcefulness and creativity that HQB represents. As we walked along the narrow aisles between seemingly endless shopfronts, he pointed out to me products that all have *smart* or *intelligent* as the prefix to their names, ranging from educational robots costing only RMB 49.9 to highly sophisticated camera heads with computer chips embedded for visual recognition. Yang shared with me some legendary success stories of how people at HQB had made astute judgements about potential profit-making opportunities and how they were able swiftly to organize resources for starting a new line of business (personal interview, 12 April 2019).

Yang’s friend Peng shares his appreciation of the local business culture. Peng has a degree in engineering from a top UK university and is currently the head of the Shenzhen Security Industry Association. On hearing that I had just spent a week in Zhongguancun, he compared the tech start-up scene in Shenzhen with that in Beijing: “Did you notice any difference? I think there is quite a bit. Here in Shenzhen, technological innovation is market-driven. You spot an opening in the market, you find the resources and you execute the idea. People don’t care much about your formal credentials, at least not as much as those investors in Beijing do. Innovation in Beijing, what should I call it? ... I think they are more talent driven. You have someone like Kai-fu Lee to set up a high-profile incubator and of course he is not going to give money to the HQB types of people. He will only invest in those who have impeccable credentials, like prestigious overseas educations, that sort of thing” (personal interview, 13 April 2019).

As China’s first Special Economic Zone, the ascendance of high-tech industries in Shenzhen undoubtedly benefited from a host of government policies. During my fieldwork, however, I most often heard my informants attribute the city’s success either to the historical tradition of entrepreneurship in the Guangdong region or to the influx of private capital. This is not entirely surprising, as the structural conditions are not easily perceivable when they are mostly enabling. What is more unexpected is how quite a few successful entrepreneurs I met in Shenzhen were critical of the role that venture capitalists have played in the AI sector. Ju and Chao are college friends who co-founded a robotics company producing Automated Mobile Robots (AMRs) for large warehouses. After showing me a slick demo video at their central office nested in one of the high-rise buildings in the Shenzhen Bay Science and Technology Park, the two of them told me they did not want to brand their start-up as an AI company because “there are too many crooks in this field.” “We provide state-of-the-art solutions to logistics,” Chao said, “that’s how I would like to position our business.” Ju added:

Much of the so-called artificial intelligence nowadays is pseudo-intelligence. You know why? Because there is too much hot money floating around as investors are all searching for the next big thing. Venture capitalists are constantly on the look-out for storeys, storeys that excite them, storeys that can convince them to invest. (Personal interview, 15 April 2019)

Both Ju and Chao agreed that they wanted to keep a distance from what they called “the AI craze.”

Another entrepreneur, Wei, who co-founded a medium-sized company twelve years ago focusing on visual recognition technologies, is no less scathing of venture capital. Near the end of my interview with him, Wei sounded a cautionary note:

I am very concerned about the Internet elites now swarming into the AI sector. Their mindset is to earn quick money. It’s the logic of financial capital. You know, to get in quickly and then get out quickly. In the financial sector, nobody wants to run for the last mile. If you are the last person in a relay, you are doomed. But the logic of technology development is the opposite. You have to run the last mile to see the final outcome. I am worried that the logic of financial capital that has been so dominant in the Internet sector is now taking over the trajectory of AI. (Personal interview, 10 April 2019)

Often referred to as China’s Silicon Valley, the spirit of innovation and creativity in Shenzhen is blended with a strong neoliberal ethos of self-enterprise and market fundamentalism. But the extreme pragmatism and nimbleness of business operations in HQB, which often take place outside the institutional framework, and the exceptionally sober assessment of the status quo offered by some of the AI entrepreneurs, who sometimes combine a global perspective with local knowledge, seem to suggest a potentially new direction for further research in this topic area.

## **AI-enabled Poverty Alleviation**

Guiyang is located in the southwest province of Guizhou, surrounded by mountains and forests. Rich in natural and environmental resources, Guizhou’s economy is underdeveloped and has been relying heavily on a few industries such as tobacco, timber, energy and mining. Among all the 31 administrative regions and provinces, Guizhou is often ranked in the bottom three in terms of per capita GDP. Since 2015, however, Guiyang has seen targeted investments in Big Data and cloud computing that are helping to promote the city as a new innovation hub in the hinterland of



China. Similar to some of the Nordic countries, the bountiful supply of hydropower and wind energy in Guizhou makes it an ideal location for large-scale data centres that usually require cheap electricity and natural cooling systems.

Compared to Shenzhen, my entry into the research field in Guiyang was much more top-down and centralized. After encountering news reports about Bainiaohe Digital Town, located 30 miles south of Guiyang, I asked two friends from Guizhou if they knew of someone with first-hand knowledge of this new government initiative. According to both Chinese media coverage dating back to 2017 and English-language international media that started to report on this in 2019 (Campbell 2019), Bainiaohe is poised to become a new tech hub specializing in data industries, with particular focus on training algorithms for artificial intelligence. Huishui County, where Bainiaohe village is located, and its neighbouring area have an underdeveloped economy that is predominantly agriculture-based. It is expected that the flourishing AI industry will provide the opportunity for the region to leapfrog into a digital future. But my initial attempt to establish contacts was to no avail. This major government-led developmental project seems to be better known to the outside world than to locals. Not until later, when I got in touch with Mr Xu, the Deputy Director of the Gui’an New District Management Committee, did I learn that most of those brand-new Nordic-style buildings I saw in the news reports were still empty. “They are waiting for more companies to move in,” Mr. Xu explained.

But Xu was keen to show me around in Gui’an. Our first stop was the Big Data Exhibition Centre, which serves as the major public relations platform for the New District. Upon entering the centre one immediately notices a large board printed with a quote from President Xi Jinping: “Developing Big Data in Guizhou is a sensible approach” (*Guizhou fazhan dashuju shi youdaoli de*). This is followed by a second board with four quotes, each offering a form of articulation of the digital economy. The first statement is by Wu Hequan, President of the Internet Society of China and an academician of the Chinese Academy of Engineering, noting that “in order to develop the digital economy, it is as important to understand conventional industry as it is to grasp information technologies. Internet enterprises need to be combined with traditional enterprises.” The second is from Don Tapscott, identified as “a futurologist who first coined the term digital economy,” announcing rather triumphantly that “the advancement of information technology has triggered a digital revolution of our times. It will fundamentally change the model of economic growth as well as the landscape of world economy, guiding enterprises into the era of digital economy.” Jack Ma, founder and CEO of Alibaba, is listed third, calling for “stronger collaboration in the cutting-edge fields of digital economy, artificial intelligence, Nano technology and quantum computing, so as to build the digital Silk Road of the twenty-



first century by linking Big Data, cloud computing and the smart city.” Lastly, there is Pony Ma, founder and CEO of Tencent, elaborating that “digital economy is actually in the same vein as Internet Plus. The evolution of digital economy is exactly the operationalization of Internet Plus and the conversion from the old to the new economy. It is the process of conventional industries applying cloud computing, Big Data and artificial intelligence to their products and services.”

Granted that the logical leap in some of these proclamations might be due to the fact they are taken out of context, the technological determinism and futuristic imagination already palpable in 1980s discourse gain more potency with the emphasis that artificial intelligence provides the critical engine that sustains the digital economy. For a province like Guizhou, which has long been a backwater when it comes to reform and marketization, AI and Big Data are now expected to fuel a leapfrogging into the new era. In my conversations with government officials, technologists, and entrepreneurs in Guiyang, many of them mentioned that AI and Big Data could aid poverty alleviation, which is the top priority on the policy agenda for under-developed hinterland provinces such as Guizhou. On prominent display in the Big Data Exhibition Centre, “the digital project of targeted poverty alleviation” is listed among the ten strategic focuses of Guizhou’s 2017–2020 Digital Economy Development Plan. Interestingly, when I started to probe further into how exactly AI could help with this cause, I was not given a straightforward answer. Instead, the discussion tended to meander toward the discrepancy, or even incompatibility, between long-established and often highly effective local practices and a technology-centric and data-driven approach to poverty reduction.

The discrepancy between expectations and reality is also manifest in the spatialized distribution of knowledge and expertise. In two of the AI startups that I visited in Gui’an New District, I heard senior managers lament “the lack of high-quality talent” in Guiyang and adjacent areas. At BeiGe, a company using visual recognition technology to process large volumes of legal documents, General Manager Yuan pointed out some of the empty cubicles in a large open-plan office and told me: “Look, I need to hire more people, not the kind who do low-end data-labelling jobs like those in Bainiaohe ... those are simple tasks. I need good algorithm engineers. But why would they come here? They would rather go to Beijing or Shenzhen” (personal interview, 1 August 2019).

Initial observation suggests that the politics of AI in Guiyang resembles that of infrastructure in two important ways. Like most infrastructural projects, such as water dams or roads, the AI industry in Guizhou is a state-led initiative serving a developmentalist and modernist agenda. It is the latest iteration of China’s strong statism in governing the political and economic life of the populace. The stated aim of poverty alleviation not only stems



from the moral obligation of the government, but also contributes to the legitimacy of the regime. AI technologies can be deployed to achieve this political goal. Secondly, like infrastructure, AI is also “shaping the present through a politics of anticipation.” As Gupta (2018) points out, “perhaps because of the investment involved, infrastructure is almost always built to exceed present needs: it is built in anticipation of a non-yet-achieved future” (63). The unoccupied Nordic-style buildings in Bainiaohe digital town and the unpopulated office space in Gui’an both speak of promises yet to be realized.

## Conclusion

In this essay I take on the task of mapping the poetics and politics of AI in contemporary China. Drawing on literature from media and communication research, STS, urban studies and anthropology, I situate this study within the broader debate about varied paths toward technological innovation and modernization. The textual data from the *People’s Daily* archive and ethnographic data from my preliminary fieldwork in Shenzhen and Guiyang corroborate and complement each other in important ways. Analysis of official media reports demonstrates a clear convergence between the logic of transnational capital and that of the developmentalist state at the discursive level, but the seemingly clean-cut imaginary of an AI-enabled good life becomes muddled when viewed from the vantage point of those working on the ground.

Constructed via the collaborative efforts of political elites, venture capitalists and technology gurus, the poetics of AI register the fantasy and desire of seeking technical solutions to deeply political issues ranging from underemployment and unequal development to the very legitimacy of the regime. The differences between media discourse in the 1980s and that of the most recent decade shed important light on the evolving significance of such a fantasy. Nonetheless, in both Shenzhen and Guiyang, rather than being plastered over by aspirational quotes, the politics of AI figure prominently at the conjuncture of state policy, local context and the actions of key stakeholders, including tech-entrepreneurs like Ju and Chao or government officials like Xu. For people in Guiyang, an AI-led future means catching up on the development ladder with the coastal region of China. Those working in the technology sector in Shenzhen aspire to be on a par with Silicon Valley in leading AI-related innovation. Conjuring two different manifestations of “time-space compression,” the Big Data Exhibition Centre alongside the unoccupied office space in Gui’an New District and the buzzing shopfronts of HQB also represent different models of “provisional compromises” (Chakrabarty

2000, 70) in achieving modernization. Further investigation into regional differences in the politics of AI within China would therefore deepen our understanding of the spatial variation and temporal asynchrony of modernity.

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