

Making the Future with the Nonhuman:

Shenzhen, the Greater Bay, and “Made in China Intelligently”

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ABSTRACT: This essay examines two interconnected human-made nonhuman entities stemming from Shenzhen, China’s first special economic zone, that have become dominant figures in mapping the city’s – and by extension, China’s – future: the robot and the drone. I bring an interdisciplinary, cultural studies approach to the multiple meaning-making practices that engage with these two objects; both participate in enacting the vision for the Guangdong-Hong Kong-Macao Greater Bay Area as an extension of the success of Shenzhen. These practices simultaneously normalise aspirations for a future fuelled by the power of nonhuman technological agents while offering glimpses into the uneven power relations between different humans that underpin such future making. At the same time, they also point to the emergent possibilities of meaning-making that conjoin the human and the nonhuman.

KEYWORDS: Shenzhen, China, future, science fiction, nonhuman, robot, drone, artificial intelligence, the Guangdong-Hong Kong-Macao Greater Bay Area.

Introduction

In 2022, an elementary teacher friend in Shenzhen, China’s first special economic zone (SEZ), shared a mini graphic novel by a third-grader on WeChat titled *Happy 2042* (*Kuaile de 2042* 快樂的2042). On the cover page, a little girl points an index finger up to the sky, with a pink robot on her left. Together, they look upward at the title rendered through symbols resembling tubes, space ships, and planets. Below, an ascending rocket and a flying car with wings sit on each side of the author’s name, Feng Qianyun 馮芊允. On the first page, the little girl receives a message in a bottle from 2042 that says: “In the world of 2042, everyone is living in this high-tech happy land.” The pages go on to depict robots planting crops and serving in restaurants while drones help with door-to-door delivery (Figure 1).

My friend introduced the illustrations as “originating from life, creating the future,” recalling that “let’s meet in 20 years” sounds like a popular song from the 1980s, “Young friends coming together to meet” (*nianqing de pengyou lai xianghui* 年輕的朋友來相會). Written in 1980 at the onset of reform and opening up, the uplifting song with bright tones and exuberant rhythms was familiar to many of us growing up in that era. One line, for example, says, “On whom does the creation of miracles rely? On me, on you, on us, the new generation of the 1980s.” The same sense of optimism is shared

Figure 1. Two screenshots of the mini graphic novel *Happy 2042*



Source: author’s WeChat feed.

in the mini graphic novel, except that the human protagonist is encountering a new round of miracles 20 more years into the future. This time, the central figures depicted in this future appear to be numerous human-made *nonhuman* agents, most prominently robots and drones.

Nonhuman actors created by humans have long been prominent figures in sci-fi imaginations of futurity in Euro-America, as exemplified by the popular series of films *The Terminator* from 1984 to 2003 (Richardson 2015). In the Chinese context, a similar fascination with robots – and by extension, drones – can also be found in science fiction, a genre that dates back to the late Qing (Henningson 2020). One such example is Ye Yonglie's 葉永烈 1978 short-story-turned illustrated children's book, *Little Smarty Travels to the Future* (Xiao lingtong manyou weilai 小靈通漫遊未來), which features a kitchen robot nicknamed Iron Egg (tiedan 鐵蛋) (2020). More recently, robots and flying transportation vehicles show up in Chinese writer Liu Cixin's 劉慈欣 Hugo-award-winning trilogy *The Three-body Problem* (San ti 三體), first published in 2006. *The Wandering Earth* (Liulang diqiu 流浪地球), another one of Liu's stories, was adapted into two blockbuster movies that also feature an array of robots and drones. The second film in the series, which premiered in 2023, even portrays an artificial intelligence (AI) figure named 550W as a central character.

Yet my friend's point that the third-grader's novel originated from life struck me as particularly intriguing. After all, the robots shown in *The Wandering Earth II* all turned out to be real products developed by a Shenzhen company.¹ Elsewhere, I have argued that Shenzhen is a place where multiple forms of futurity are negotiated. The curators for a multimedia show called Multi-future that I visited in 2014, for example, emphatically stated that they were "not concerned with 'future' in terms of material technology so much as with changes in thought and consciousness which are happening or will happen due to influences from current reality" (Yang 2017: 205). Now, in 2023, as Shenzhen is designated a "core engine city" in building the future of the Guangdong-Hong Kong-Macao Greater Bay Area in the State Council's plan released in 2019,² I couldn't help but detect a difference in the realities that informed Multi-future and *Happy 2042*, the latter saturated with the omnipresence of technological agents.

Anthropologist Arjun Appadurai has argued that "the future is not just a technical or neutral space, but is shot through with affect and with sensation" (2013: 286-7). Indeed, as science and technology scholar Silvia Lindtner has cautioned, the transnational celebration of Shenzhen as a laboratory for dreaming a "happy" future after the global financial crisis of 2007-2008 can easily obscure the tendency of such future-making to reproduce the nightmares of modernity (2020). How, then, can we attend to a future imbued with nonhuman, technological actors as a "cultural fact," to use Appadurai's term? How are nonhuman agents called upon to conjure a citizen-subjectivity oriented to the future in the specific setting of Shenzhen as the state rhetoric of "China Dream" increasingly intersects with the prospect of "intelligent" making? What visions are emerging from the invocation of these nonhuman actors as future-makers at a time when Shenzhen is converging with eight surrounding cities and two special administrative regions (i.e., Hong Kong and Macao) to form an integrated urban cluster in the Pearl River Delta?

Taking a cue from *Happy 2042*, this essay examines two interconnected human-made nonhuman entities stemming from Shenzhen that have become dominant figures in mapping the city's – and by extension, China's – future: the robot and the drone. Featured in numerous cultural productions, these two figures have become salient future-makers in envisioning the Greater Bay as an extension

of the success of Shenzhen. Bringing an interdisciplinary, cultural studies approach to these objects, I employ a mixture of methods, ranging from textual analyses of Shenzhen-inspired cultural artifacts to ethnographic observations drawn from everyday encounters. The latter also draws on what media studies scholar John Postill calls "remote ethnography" in the digital age (2016) – namely, my own experiences as a researcher of globalisation and (Chinese) media based in the US and ongoing WeChat conversations with my informants who reside in Shenzhen. Whether it is the Shenzhen residents' depictions of a robotic future, or the book *AI 2041: Ten Visions for Our Future* coauthored by the computer scientist turned venture capitalist Kai-fu Lee and science fiction writer Chen Qiufan, or media narratives such as the *Live from the Greater Bay* (Zhibo Dawanqu 直播大灣區, LFGB) series produced by China Media Group, these wide-ranging cultural practices lend meaning to a futurity imbued with nonhuman agents created by humans.

My critical analysis pays specific attention to the intersecting visions for a future that emerged from these practices, which disrupt the binary between the human and the nonhuman. These visions simultaneously normalise aspirations for a future fuelled by the power of nonhuman agents while offering glimpses into the uneven power relations between different humans that underpin such future-making. They also point to the emergent possibilities of meaning-making that conjoin the human and the nonhuman. Before I delve into these meaning-making practices, I will first situate this article in a broader scholarly conversation about human-robot assemblages and futurity to highlight the ways in which this essay connects the previous research based in Euro-American contexts with those emerging in China studies to contribute to a global conversation about human and nonhuman futures.

Human-nonhuman entanglements and future-making

The development of information and other technologies has prompted a rethinking of an anthropocentric notion of subjectivity in humanities and social sciences alike, as exemplified by Donna Haraway's *A Cyborg Manifesto* (1999) and Katherine Hayles' *How We Became Posthuman* (1999). This posthumanist turn in thinking about human-nonhuman entanglements, for literary scholars Anfeng Sheng and Fei Wang, presents possibilities for imagining "an egalitarian, harmonious coexistence of humans and robots" (2022: 574). Sheng and Wang's analysis of the representation of human-robot relations in Euro-American science fiction accounts echoes anthropologist Katherine Richardson's observation of the uneven relationship between robot "slaves" and their human "masters," the

1. "深圳機器人走進流浪地球2" (Shenzhen jiqiren zoujin liulang diqiu 2, Shenzhen robots entering *The Wandering Earth II*), Sina.com (新浪網), 31 January 2023, https://k.sina.com.cn/article_7472808083_m1bd6a0093033011f1w.html?from=tech (accessed on 11 March 2023).

2. Central Committee of the Chinese Communist Party and the State Council 中共中央國務院, "中共中央國務院印發《粵港澳大灣區發展規劃綱要》" (Zhonggong zhongyang guowuyuan yinfa "Yue Gang Ao Dawanqu fazhan guihua gangyao," The Central Committee of the Chinese Communist Party and the State Council issued the "Guangdong-Hong Kong-Macao Greater Bay Area Development Plan"), 18 February 2019, www.gov.cn/zhengce/2019-02/18/content_5366593.htm#allContent (accessed on 28 August 2022).

origin of which can be traced to the 1920s Czech play, *Rossum's Universal Robots* (2015: 2). Yet curiously, Sheng and Wang only mention in passing one story from Chinese history, a parable from the Warring States about a puppet maker named Yan (*Yan shi* 偃師) (2022: 566). What remain underexamined are the ways in which human-machine assemblages manifest themselves in narratives that stem from the Chinese context, including but not limited to Chinese-language science fiction, a previously marginalised genre that has only recently attracted more scholarly attention.

On the other hand, in what “futurists dubbed ‘the Asian Century,’” Asian Americanist Long T. Bui has observed the convergence of “the growing influence of robotics,” especially as related to China’s fast-growing AI development and the longstanding racialisation of “Asians as robotic machines” in Euro-American representations (2022: 157). This work usefully complements the critique of “techno-orientalism” – a Euro-American representational trope that others Japan in the 1980s (Morley and Robins 1995; Roh, Huang, and Niu 2015) – if not “Sinofuturism,” another Western category that similarly projects China onto a high-tech future (Conn 2020). In response, Chinese cultural producers have come to engage with the concept and imagine futurity *on their own terms* while also considering “how to situate the future on a global scale” (Conn 2020). A case in point is none other than Chen Qiufan (or Stanley Chan), an internationally award-winning sci-fi writer originally from Shantou, another SEZ not far from Shenzhen and also part of the Pearl River Delta now being reimagined as the Greater Bay. In his nonfiction writing, Chen has argued that in an era of hyperreality, *à la* Jean Baudrillard, “technology practitioners, entrepreneurs, educators, artists, etc.” increasingly “draw inspiration from science fiction works, or learn to reconstruct reality from the perspective of science fiction,” turning this “fringe genre” into perhaps “the greatest form of realism” (Chen 2020: 41–4).

In light of recent developments in China in the area of AI, robotics, drones, and other high-tech artifacts, a critical engagement with the human-nonhuman assemblages that emerge in meaningful future-making practices in Shenzhen/China (including Chen’s sci-fi work) can be brought into a productive dialogue with global discussions of nonhuman agency in shaping planetary futures (Bennett 2010). This work demands not only closer scrutiny of the Chinese-specific utopias that centre nonhuman agents (Krenz 2023) but also requires that we connect phenomena within China to border-crossing movements of people, things, imagery, and information. This is precisely the approach that I bring to the study of robots and drones in and beyond Shenzhen as well as China’s Greater Bay vision, with which the city’s future is increasingly intertwined. In doing so, I hope to contribute a historically specific account of future-making in China to the scholarly debate on human-nonhuman entanglements that primarily emerged from Euro-America without presuming that these phenomena in China unfold in isolation from the world beyond.

The robot/worker in the age of “made in China intelligently”

In 2022, I met a robot named Bella in a Japanese restaurant in New Jersey. With a screen face that displayed cute emojis and a “belly” that carried multiple plates and drinks to the table, Bella looked quite like the waitress robot in Feng’s illustrations. I later found out that

the robot was made by a Shenzhen company called Pudu Robotics. Founded in 2016, the company is exporting robots to “more than 60 countries worldwide,” working in wide-ranging sectors from manufacturing to entertainment.³

My encounter with Bella reminded me of a colleague who moved back to China in 2021 after many years of living abroad. He shared pictures of a robot delivering dumplings to his hotel room in Shanghai, inviting those of us still in the US to return and “experience the future, for better or for worse.”⁴ In similar ways, my Shenzhen friend’s idea that the vision of a robot-infused 2042 came from real life was not exactly an exaggeration. During the 2022 Winter Olympics, foreign athletes were reportedly “dazzled” by “a real-life version of *Robot Stories*” as they found themselves in the presence of an abundance of robots as “guides,” “supervisors,” and “cleaners,” among others.⁵

In Shenzhen, a city known for its speedy technological innovations, this robot-infused “future” seemingly arrived sooner than elsewhere. It was in Shenzhen, on New Year’s Day 2019, that I first encountered a cooking robot, reminiscent of the Iron Egg character in Ye Yonglie’s book. The term robot, or “machine person” (*jiqiren* 機器人), was invoked during our car ride to a high-school friend’s apartment on the outskirts of Shenzhen. From my friend’s tone, I detected a sense of excitement, even pride. I was a bit disappointed when the machine in reality looked just like a rice cooker, not the human-like figure I had imagined. As we tasted the home-style dishes it made, I learned that the Shenzhen startup producing the robot had a fun name, “meals come” (*fanlai* 飯來).

While Fanlai conjures the idea that the robot can make meals magically appear, the actual process involves a mobile phone app provided by the company on which customers can order pre-packaged, compartmentalised ingredients delivered to households by human couriers. The app is also needed to operate the machine, moving the opened package steadily across the top to let the ingredients fall into the container below step-by-step. Clearly, making the “meals come” demands no less than an assemblage of human and nonhuman agents, from the information technology of the mobile phone to the infrastructure consisting of delivery workers, the transportation and communication devices they rely on, and the roads and highways that facilitate their movement.

Fanlai was not the only robot I encountered during my Shenzhen stay that year. After the meal, my friends and I went to the nearby headquarters of the Beijing Genomics Institute (BGI) for a tour. Since it was during the New Year’s national holiday, few human employees were working there. But through a glass wall, we saw several robots operating on their own. When zoomed in, one of the pictures I took of a robot there showed a label on a machine standing close by: “intelligently made by BGI” (*Huada zhizao* 華大智造).

It wasn’t long before I noticed that “made in China intelligently” (*Zhongguo zhizao* 中國智造) has become a visible slogan in Chinese

3. “關於我們” (*Guanyu women*, About us), Pudu, <https://www.pudutech.com/company> (accessed on 5 September 2022).

4. WeChat conversation, 11 September 2021.

5. “2022北京冬奧會，讓世界再次看見中國的‘大國智慧’” (2022 *Beijing dong’aohui*, *rang shijie zaici kanjian Zhongguo de “daguo zhihui*,” The 2022 Beijing Winter Olympics let the world see China’s “wisdom of great power” again), *Zhihu* (知乎), 16 February 2022, <https://zhuanlan.zhihu.com/p/468141349> (accessed on 14 September 2022).

media, updating the previously prevalent “made in China” to “made in China intelligently.” Replacing the word manufacturing (*zhi* 制) with its homonym intelligence (*zhi* 智), the term became the title of a 2021 novel by the author Huang Xiuping 黃秀萍 chronicling the journey of three entrepreneurs coming together in Shenzhen to create “intelligent equipment and robotics,” or “industries of the future” (p. 277). The tying of a future to nonhuman agents powered by AI, also highlighted in the film *The Wandering Earth II*, seems to resonate with a widespread anticipation that China will be, if it not already is, the epicentre of a robotics revolution.

“Meet the future: Those things about robots” (*Yujian weilai, guanyu jiqiren de naxieshi* 遇見未來，關於機器人的那些事) is a feature story from 2015 in *Huawei Technologies*, an electronic publication by the well-known Shenzhen-based tech giant. In a video called “Robots and the future,” a researcher at Huawei highlights AI as “a technological goal” and robots as “technological products.” He distinguishes two categories, “industrial robots” and “service robots,” the latter being in an early stage of development but having “the greatest growth potential in the future.” Invoking the sweeping robot as an example, the researcher goes on to list several future applications of robots in the household. The accompanying text for the video also emphasises the machines’ ability to “download new skills from the cloud, just like Neo in *The Matrix*,” turning “sci-fi films” into “reality.” Depicted is a future wherein “robots can improve people’s lives, reaching the level of actually tackling complex missions.”⁶

This focal attention to robotics can be seen in almost all of the episodes of the *LFG* series. The episode on Shenzhen, for example, highlights a soon-to-be-completed building entirely staffed by robots conducting biological research inside. AI-powered, uncrewed vehicles for goods and passengers are also a highlight in the segment on Guangzhou. Even the pandemic seems to have provided an unprecedented opportunity. According to the Chief Brand Officer for UBTECH, another Shenzhen-based robotics company, China’s well-handled control of the pandemic allowed domestic industries to test products in settings such as restaurants, exhibitions, and communities. The “investment in infrastructure aids in intelligently upgrading relevant industries,” which in turn benefits the robotics sector, and therefore “the idea that China is the future of global robotics is not at all unfounded.”⁷

Such widespread enthusiasm for a robotic future invites more critical attention, especially when the name of the cooking robot Fanlai masks the myriad human and nonhuman entanglements on which it depends to bring meals to the table. After all, even though automation has long figured prominently in imaginations of the future of work, there remains a tension between the aspiration for automated efficiency and the threat of eliminating jobs for the many humans employed in China’s massive manufacturing sector. Indeed, the “Meet the future” Huawei story is emblematic of a widespread rhetorical pattern (also discernible in *LFG*) to deploy the nonhuman figure of the robot to obscure the dehumanising tendency inherent in the conditions for bringing about such a futurity.

Situating China in a long trajectory of global robotic innovations, the Huawei story contains a “development history” of “robots,” from the Czech origin of the word (meaning slaves) to the fast-paced growth of service robotics in China. The connotation of slaves, combined with the orientation towards service, brings to

mind the imagination of a future of “robot ‘slaves’ as ‘push-button servants’” in the 1957 article in the American magazine *Mechanix Illustrated* discussed in anthropologist Ruha Benjamin’s *Race after Technology* (2019: 57). As Benjamin suggests, such an imagination reflects “the implicit Whiteness of early tech culture” and harks back to the historical rhetoric of “dehumanisation” in referencing robots (ibid.: 55-6). The ways in which racial difference informs such tech imaginations in the American context – arguably indexed by the Chinese-produced robot-server Bella – can also inspire us to think more about the uneven power relations that underlie Shenzhen’s optimism for a robotic future. After all, as communication scholar Jack Qiu argues, the enslavement of workers who labour in factories in Shenzhen and elsewhere producing Apple products for the world – whom he dubs “iSlaves” – can be usefully compared to historical forms of slavery due to the similarities in practice (2017). Indeed, just as Bella is evocative of the ongoing discourse surrounding black and brown immigrant workers willing to work for low wages in the US, the couriers that deliver packages for the cooking robot I saw in Shenzhen are part of the booming platform economy in China, which employs tens of thousands of humans in a system that algorithmically optimises efficiency often at the expense of workers’ safety and wellbeing.⁸ The near-absence of these workers in official representations of the city’s future, such as *LFG*, echoes the invisibility of physical labour in *Little Smarty* – an erasure that points to a “post-labor” (Conn 2022: 35) utopia that masks the human costs of upgrading the “world’s factory” with intelligent nonhumans.

This tension between the human worker and the nonhuman robot can be keenly felt in Huang’s novel *Made in China Intelligently*. Having won awards for her Shenzhen-based working-class literature (*dagong wenxue* 打工文學) two decades ago, Huang has centred the narrative around Li Fan, a young rural-to-urban migrant woman and daughter of a war veteran who sacrifices her life to save her fellow workers from a factory accident. Originally a top student who dreamed of becoming an engineer, Li Fan dropped out of high school before moving to Shenzhen to become a “migrant working girl” while continuing to pursue an associate’s degree. During her journey, she becomes the object of desire for three men who go on to play key entrepreneurial roles in the upgrade from “made in China” to “made in China intelligently.” One of them even memorialises Li Fan in the name of his Suzhou-based startup specialising in niche-market robotics: “Commemorating Fan” (*Si Fan* 思凡).

As one commentator pointed out at a 2020 forum on the novel organised in Beijing by the magazine *Renmin wenxue* 人民文學, the author has “woven the past and future together.”⁹ Indeed, the

6. Xue Hua 薛華, “遇見未來，關於機器人的那些事” (*Yujian weilai, guanyu jiqiren de naxieshi*, Meet the future: Those things about robots), April 2015, <https://www.huawei.com/cn/technology-insights/publications/winwin/ai/gmic-robot> (accessed on 5 September 2022).

7. Zhou Hao 周昊, “優必選：世界機器人行業的未來在中國” (*Youbixuan: Shijie jiqiren hangye de weilai zai Zhongguo*, UBTECH: The future of the world’s robotics industry is in China), *Guancha.cn* (觀察者網), 11 July 2021, https://www.guancha.cn/ChanJing/2021_07_11_597930.shtml (accessed on 5 September 2022).

8. “Delivery Workers, Trapped in the System,” *Chuang* (闖), 12 November 2020, <https://chuangcn.org/2020/11/delivery-renwu-translation> (accessed on 6 February 2021).

9. “黃秀萍長篇小說《中國智造》研討會在京舉行” (*Huang Xiuping changpian xiaoshuo “Zhongguo zhizao” yantaohui zai Jing juxing*, Huang Xiuping’s novel *Made in China Intelligently*’s seminar held in Beijing), *Renmin wenxue* (人民文學), 24 September 2020, www.rmwxw.com.cn/index.php?m=content&c=index&a=show&catid=7&id=2447 (accessed on 9 September 2022).

novel follows an extremely complex and convoluted structure, blending flashbacks, personal memoirs, the social media posts of key characters, and reportage by way of a writer reminiscent of Huang herself. The book's temporal multiplicity disrupts the linear progression implied by the dominant media narrative, "from made in China to made in China intelligently." Beautiful, strong, and selfless, Li Fan embodies an ideal figure of the migrant workers who have long toiled in Shenzhen's factories in the era of "made in China." Her absence following the accident provides a key inspiration for the three male entrepreneurs, who have struggled with challenges such as the movement of foreign supply chains to other countries with cheaper labour (such as Vietnam) and the US-China trade war since 2018. Yet at the end, they strive to convert their "intelligent humanless factory" into an "intelligent factory with 'humans,'" or "human-like robots who can work happily, love freely, and not miss out on this life and this world like humans" (p. 301).

At the end of the novel, one such "human-like" robot appears as a reincarnation of Li Fan. (Li has already reappeared as her half-sister and doppelganger, who becomes the lover of one of the entrepreneurs and later marries another one of the trio, named Gu Rui). As a man-robot resembling the third of the trio offers flowers to the young-woman-robot, the three men have to push a button in their hands simultaneously to allow the woman-robot to accept the flowers. Before they do so, a young man and rising star in AI development grabs the flowers and offers them to the robot, who also resembles Gu Rui's daughter, his love interest. It is then that the three entrepreneurs press the remote, allowing the robot to accept his love before telling the crowd: "My name is X girl... I love you! I will always, always love you!" (p. 310).

This "futuristic" scene at the end of a novel primarily set in the present was followed by Huang's dedication of the book to the 40th anniversary of Shenzhen's reform and opening up. In the postscript, she also expresses her gratitude to the publisher, China Workers Publishing House. "From small love to big love, writing the dreams of individuals and enterprises into the sector's impact and the nation's ideal – this is the novel's main melody," writes Huang (p. 311). In this love story, Li Fan becomes an allegory for the nation's "made in China" past that finds rebirth in the future through the human-like figure of the robot X girl. By establishing this inseparability between the human and the nonhuman, the past and the future, Huang has also invited more careful consideration of the fate of China's migrant workers in the age of intelligent making. The fact that X girl's actions are controlled by the male bosses reflects the power ascribed to the entrepreneurial class called upon to create the nation's future. This echoes the repeated representation of this privileged class in almost all episodes of *LFGB*, especially the moments that highlight policies aimed at attracting entrepreneurs from Hong Kong. Li Fan's death as a central plot device also hints at the sacrifice that the working class has endured and will perhaps more viscerally encounter as the nation marches towards the age of AI. As such, the novel affords Shenzhen's migrant workers a visible subject position that is otherwise erased in dominant representations of the city's future. This insertion of humans into an imagined future seemingly devoid of humans can be usefully connected to the prevalence of another type of human-made

nonhuman agent in Shenzhen's future making. It bears the Chinese name of none other than 無人機 *wurenji*, an equivalent for drones that translates directly as "humanless machine."

The drone visions in the Greater Bay

With delivery services becoming a booming business during the pandemic, it is perhaps no surprise that in Feng's *Happy 2042*, delivery drones are set to replace human couriers. In a WeChat conversation in 2022, an engineer-turned-entrepreneur friend in Shenzhen also told me that Shenzhen's future is better represented by companies such as DJI (*Dajiang* 大疆).¹⁰ DJI, the Shenzhen-based drone maker, is also invoked in Huang's novel alongside Huawei and BYD (an electronic vehicle maker) as an exemplary intelligent manufacturer that would outshine companies such as Alibaba in the twenty-first century (p. 286).

"The Future of Possible" is in fact the lead-in for the "About us" page of DJI's website: "Creativity is at the heart of every dream," and DJI offers "visionary creators the tools they need to bring their ideas to life."¹¹ Noted by *Time* magazine as one of the world's "Top 100 Most Influential Companies" in 2021, DJI "holds 70% of the global consumer drone market."¹² In the Russia-Ukraine war that began in 2022, both sides have used DJI products even though the company maintains that "its drones are for hobbyists, police and first responders, not for helping wage war."¹³

The English name drone in fact originated in World War II, when "the small robotic planes used for target practice (...) were colloquially named after 'drone' bees due to their black striped markings" (M. Benjamin 2013: 13). Yet consumer drones developed by DJI and favoured by US consumers come "predominantly in the shape of multirotor platforms," which can be better traced to the 1907 invention of the first quadcopter (Hildebrand 2021: 6). While the drone's Chinese name is a literal translation of other English terms such as unmanned aircraft systems (UAS) or unmanned aerial vehicles (UAV), the characters 無人 *wuren* (no human) and 機 *ji* (machine) simultaneously connote its human-made status and capacity to move without humans. With the character *ji* present in both machine (*jiji* 機器) and airplane (*feiji* 飛機), *wurenji* serves as an intriguing counterpart to *jiqiren*, the Chinese name for robots connoting machines that are *human-like*.

The development of drones in China has a relatively short history that is centrally anchored in Shenzhen. In 2009, Northwestern Polytechnic University, which began drone research in the 1950s, signed a contract with Shenzhen to launch a base for developing civilian UAVs in the city. Announced in January 2014, the Shenzhen Aerospace Industry Development Plan (2013-2020) listed the aerospace industry as one of Shenzhen's three key future industries. It

10. WeChat conversation, 14 August 2022.

11. "關於大疆" (*Guanyu dajiang*, About us), DJI website, <https://www.dji.com/company> (accessed on 16 September 2022).

12. Charlie Campbell, "DJI Is One of the 2021 TIME 100 Most Influential Companies," *Time*, 26 April 2021, <https://time.com/collection/time100-companies/5949998/dji-innovators> (accessed on 16 September 2022).

13. Thomas Brewster, "China's DJI and Its Billionaire Chief Put in an Awkward Spot as Both Sides in Ukraine War Use Its Drones," *Forbes*, 17 March 2022, <https://www.forbes.com/sites/thomasbrewster/2022/03/17/chinas-dji-and-its-billionaire-chief-put-in-an-awkward-spot-as-both-sides-in-ukraine-war-use-its-drones> (accessed on 10 September 2022).

proposed the “UAV take-off project,” lending key support to building a development base for drones.¹⁴

The designation of Shenzhen as an experimental site for advancing drone technologies had to do with the city’s status as “the global distribution centre for electronic accessories,” its proximity to “the raw materials for drone production,” its “strong industry-university-research atmosphere,” and “flexible government support.”¹⁵ Shenzhen, in other words, has provided an environment that nurtured companies such as DJI. Its founder, Wang Tao 汪滔, a Hangzhou native, was educated in Hong Kong before coming to Shenzhen in 2006 to set up the company in a “20-square-metre warehouse.” Ever since his early years, Wang has aimed to perfect the technology of suspending an uncrewed model plane motionless in space. This ideal for “fixation” was finally realised in 2008. Before long, DJI was churning out products at a speed on par with iPhone upgrades, increasingly touted as a model for “made in China intelligently.”¹⁶

An orientation towards the future of intelligent making also characterises much of DJI’s branding. For example, featured on the company website is a multimedia story from 2019 titled “Delivering the Future.” Echoing *Happy 2042*, it documents the use of DJI M600 by the Israeli startup Flytrex for commercial delivery in the US. The video starts with the narration accompanying an aerial shot from the night sky of a lit-up city: “Ten years from now, this isn’t gonna be a dream anymore (...). It’s just gonna be part of your everyday life.” Ending the story is a quote by the company’s vice president envisioning “a world where small unmanned aircraft can deliver everything from a burger to critical medical supplies.”¹⁷

Just as in Huang’s novel, the story of DJI is told as a triumph in the 2019 US-China trade war. Its global market share reportedly increased even when its products were banned for US military use, leading analyst Michael Blaze to announce, “Everyone is chasing the footsteps of DJI. It is China’s Apple!”¹⁸ DJI’s new headquarters, designed by the British “starchitect” firm Foster and Partners, who built Apple’s headquarters, is nicknamed “city in the sky.” The building’s “inspiration came from looking at the world from a bird’s-eye view like an aerial photograph.” It aims to offer “an impression of lightness” within “the design of interior spaces,” blending “information technology and art installations to represent the industry characteristics of DJI as a drone maker.” Celebrated as no less than “a collision of buildings and drones,” the newly completed building is set to create a “community in the air” for Shenzhen and “become a classic representative of the iconic ‘futuristic’ architecture” in the Greater Bay.¹⁹

No doubt, drones have become key nonhuman figures central to making the future of the Greater Bay tangible and palpable in the present. They are increasingly used to perform a fireworks-like new ritual at key ceremonial events such as the “Sailing to the Greater Bay Area” (*yangfan yuanhang Dawanqu* 揚帆遠航大灣區) New Year’s Concert, which has been broadcasted annually on New Year’s Day since 2020. In a format similar to the long-standing Spring Festival Gala on China Central Television (CCTV) that began in the 1980s, the evening features a celebrated group of singers and musicians from mainland China, Hong Kong, Macao, and Taiwan, along with preprogrammed drones “carefully choreographed to form ‘star maps’ to light up the night sky.”²⁰ At the beginning of the 2022 concert staged in Zhuhai, the SEZ adjacent to Macao, a giant virtual ship

emerges from the main stage set, itself shaped like a time capsule composed of radiating rings. At crucial moments, drones formulate texts such as “Setting sail” (*yangfan* 揚帆), “In pursuit of dreams” (*zhuimeng* 追夢), and the pairing of city names such as Zhuhai-Macao and Shenzhen-Hong Kong. At the same time, most of the numbers performed by the artists are well-known popular songs from the 1980s and 1990s, if not before. The invocation of the past through the collective and affective memory of these songs lends further legitimacy to the dream of turning the “grand future” (*da weilai* 大未來) of the Greater Bay into a reality.²¹

While none of my Shenzhen-based friends seems to know about the concert, its YouTube recording has accumulated more than 1.4 million views with more than ten thousand “likes.” One Overseas Chinese viewer was quoted by *China Daily* (*Zhongguo ribao* 中國日報) as saying, “This concert made me feel once again that the Greater Bay Area is a symbol of China’s future development. Just like Shenzhen was a pioneer zone for reform, the evening allowed us to see the thriving prospects of China’s development.”²² Shenzhen was indeed the hosting site for the first two instalments of the concert in 2020 and 2021. The footage I was able to locate on Baidu indicates that in the 2020 concert, a robot performed as part of the orchestra. A Shenzhen entrepreneur is also featured in the 2022 concert showing off his robot toys that can bow to offer New Year’s greetings.

In addition to becoming performers in the sky, drones have also been instrumental in providing a key visual language for representing the infrastructure, landmarks, and landscapes of the different cities within the Greater Bay. Aerial panning from a drone’s-eye view is indeed the primary vocabulary through which *LFGB* showcases the bridges, railways, tunnels, and other infrastructural connections being

14. Yu Lu 餘璐, “深圳民用無人機想要飛得更高” (*Shenzhen minyong wurenji xiangyao feide genggao*, Shenzhen civilian drones want to fly higher), *Shenzhen shangbao* (深圳商報), 25 February 2014.
15. Yu Lu 餘璐, “深圳民用(...)”, op. cit.
16. Qiu Chuji 邱處機, “41歲, 大疆創始人身家400億: 8年全球第一, 力抗美國政府, 他憑什麼?” (*41 sui, Dajiang chuanshi ren shen jia 400 yi: 8 nian quanqiu diyi, likang Meiguo zhengfu, ta ping shenme?*, At the age of 41, the founder of DJI has a net worth of 40 billion: No. 1 in the world for 8 years, and he fought the US government. What does he rely on?), *NetEase* (網易), 1 May 2022, <https://www.163.com/dy/article/H6A8T4M90524R9JP.html> (accessed on 10 September 2022).
17. “DJI Drones: Delivering the Future,” DJI website, 22 February 2019, <https://www.dji.com/altitude/drones-for-good-flytrex-drone-delivery-dji-m600> (accessed on 5 September 2022).
18. Qiu Chuji 邱處機, “41歲, (...)”, op. cit.
19. ArchiDogs 建造築格, “大疆總部‘天空之城’竣工, 一場建築與無人機的碰撞!” (*Dajiang zongbu “tiankong zhi cheng” jungong, yichang jianzhu yu wurenji de pengzhuang!*, DJI headquarters “city in the sky” completed, a collision between buildings and drones!), *CareerEngine.us* (北美生活引擎), 25 April 2022, <https://posts.careerengine.us/p/62661971afb1b168c6e75f0a> (accessed on 6 September 2022).
20. Tang Qizhen 唐祺珍, “中央廣播電視總台‘揚帆遠航大灣區—2022新年音樂會’將與全球觀眾見面” (*Zhongyang guangbo dianshi zongtai “Yangfan yuanhang Dawanqu — 2022 xinnian yinyuehui” jiangyu quanqiu guanzhong jianmian*, China Media Group’s “Sailing to the Greater Bay Area – 2022 New Year’s concert” will meet audiences around the world), *Dute* (讀特), 31 December 2021, <https://www.dutenews.com/p/6422414.html> (accessed on 12 September 2022).
21. “直播回看: 揚帆遠航大灣區—2022新年音樂會” (*Zhibo huikan: Yangfan yuanhang Dawanqu — 2022 xinnian yinyuehui*, Recorded Live: Sailing to the Greater Bay Area – 2022 New Year’s Concert), <https://www.youtube.com/watch?v=XhxOZMhKdro> (accessed on 12 September 2022).
22. “揚帆遠航大灣區—2022新年音樂會”用美妙的樂音向2022問好” (*“Yangfan yuanhang Dawanqu — 2022 xinnian yinyuehui” yong meimiao de yueyin xiang 2022 wen hao*, “Sailing to the Greater Bay Area – 2022 New Year’s concert” greets 2022 with beautiful sound of music), *China Daily* (中國日報), 3 January 2022, <https://ex.chinadaily.com.cn/exchange/partners/82/rss/channel/cn/columns/j3u3t6/stories/WS61d2c167a3107be497a0064e.html> (accessed on 12 September 2022).

established between the cities to facilitate logistics and create the “one-hour circle of living” (*yi xiaoshi shenghuo quan* 一小時生活圈), one that allows residents to live, work, and enjoy leisure time in multiple cities within the Greater Bay. Media studies scholar Patrick Ellis has traced this “technologically mediated aerial view” offered by the drone back to many of its nineteenth-century precursors, from hot air balloons to observation rides at the World’s Fairs (2021: 10). Departing from Paul Virilio’s belief that “aerial vision is (...) a hawkish viewpoint that facilitated guiltless destruction by its ethical distance from those on the ground,” Ellis has uncovered a less deterministic perspective. A “unique genre of aeroscopic device” debuted at the 1915 San Francisco World’s Fair. Aeroscope, for example, offered a vision that “was not one of domination, mastery, or control, but rather disorientation, observation, and playfulness” (ibid.: 102). This perspective, echoing the ethnographic interviews among drone hobbyists conducted by communication scholar Julia Hildebrand in Euro-America, is quite instructive for grasping the characteristics of the drone footage in *LFGB*. Often, the slow-paced movement zooms from a distance and gradually brings the viewer closer to a landscape or a structure, inviting contemplation while retaining a sense of openness. The viewer is positioned as an explorer of sorts whose vision aligns with that of the drone, joining the camera on a journey towards a future that literally unfolds in front of one’s eyes.

To be sure, during the time of “zero-Covid” policies, the drone’s-eye view in *LFGB* brings to mind the pervasiveness of state surveillance. In this sense, it can be seen as an updated form of the view from above, in Michel de Certeau’s sense of the term – an all-encompassing perspective “addressing an enigmatic message to the pedestrian who is for an instant transformed into a visionary: *It’s hard to be down when you’re up*” (1984: 92). The finale episode on Hong Kong, in particular, strikes one as a most explicit form of interpellation. With numerous government officials repeating phrases such as “We are very confident about Hong Kong’s future,”²³ the episode, released on the eve of the 25th anniversary of the city’s “return” to China (on 30 June 2022), seeks to address the viewer as a patriotic subject at a time when survey results have continuously shown a prevailing unwillingness among Hong Kong residents to envision their future as part of the Greater Bay.²⁴

There exists, however, a key difference between the view from a high-rise depicted by de Certeau and the drone’s-eye view in that the latter is a vision separated from the body of the image-maker. The machine’s eye is at a distance from the human body even as the two share the same vision. This simultaneous conjoined and disconnected sensation of the human and the nonhuman potentially disrupts the totalising national vision so ostensibly propagated through the series’ display of infrastructural buildup (such as intercity high-speed rails) and the success stories of “ecological civilisation” (*shengtai wenming* 生態文明) in the form of leisure green spaces and parks.

One intriguing segment in *LFGB* takes place in the episode on Jiangmen titled “An aspired future” (*weilai keqi* 未來可期), where DJI’s Mavic 2 makes an appearance on screen. Introducing herself as A Yu (Huang Junyu), a female photographer self-identified as part of the “post-95 generation” (born after 1995), tells the audience: “The tallest building in Jiangmen is 200 metres high. My camera-drone can fly up to 300-400 metres high. From my drone’s lens, [I] can see these beautiful scenes...” Her narration is accompanied by

drone footage of high-rises, river and bridges, windmills, and historic sites interspersed with shots of herself holding a camera or a camera phone, traversing the roads, bridges, and neighbourhoods of the city. Invoking the city’s “rich history of Overseas Chinese” and its “culture of ‘being the first,’” Huang notes: “I wish to document everything here using my camera lens. I also hope to have an aspired future, just like Jiangmen.”²⁵

This segment exemplifies Hildebrand’s understanding of “consumer drones” as not just “aerial systems” but also “mobile assemblages of human and nonhuman agencies in hybrid geographies, creative platforms for spatial exploration and visual discovery, and (...) relational artifacts that shape spatial relations, social formations, and affective entanglements” (2021: 4). Here, Huang and her camera drone offer a hybrid view of the city’s past, present, and future, at once from above and below. The elevation afforded by the drone aligns with an uplifting imaginary of a future aspired by the photographer and the city alike, whereas the photographer’s movement across city streets emblematises the possibilities that emerge from “walking in the city” (Certeau 1984). The moment also reveals the role played by DJI drones in the series as a whole, even though the instrument’s humming presence is only occasionally heard and is most often replaced by soundtracks.

The unusual copresence of human and nonhuman agents in this segment in some ways departs from the top-down narrative of intelligent upgrade and the privileging of entrepreneurial subjects throughout *LFGB*. Huang’s narration also asserts her position as a meaning-maker quite unlike the kind of consumer subjects hailed by the series who come to consume the Greater Bay’s cultural heritage, leisure-friendly environment, and local cuisines. Interestingly, the future to which she aspires for both Jiangmen and herself is not at all clearly defined. If anything, this is a future brought on by “camera drone technologies and multimodal mobilities” – that is, “a future in which everyday media extensions and increasing cyborg configuration may be distributed across not only virtual but also vertical spaces” (Hildebrand 2021: 100). As such, it is reminiscent of what philosopher Anna Greenspan calls an “absolute futurism” with regards to Shanghai, where modernity is “remade” in defiance of a Western-specific, temporal linearity (2014: xvi). Echoing “The future of possible” slogan of DJI, the segment offers a glimpse into an expanded field of meaning-making afforded by the human-nonhuman assemblage forged with the advent of consumer drones. One can indeed discern a new subject position distinguishable

23. “一起逛閃耀的香港！回歸祖國25周年喜慶氣氛洋溢街頭，聽周星馳講述他眼中的香港” (*Yiqi guang shanyao de Xianggang! Huigui zuguo 25 zhounian xing qing qian yangyi jietou, ting Zhou Xingchi jiangshu ta yanzhong de Xianggang*, Let’s visit the shining Hong Kong together! The festive atmosphere of the 25th anniversary of the return to the motherland fills the streets, listen to Stephen Chow talk about his vision of Hong Kong), <https://www.youtube.com/watch?v=Vwr5Q8NO1Zs> (accessed on 16 September 2022).

24. Hong Kong Public Opinion Research Institute, “HKPORI Press Conference Cum Mini-policy Forum on ‘Living and Working in Greater Bay Area,’” 29 April 2022, <https://www.pori.hk/press-release-en/2022-04-29-pm.html?lang=en> (accessed on 16 September 2022).

25. “劉德華向全球推介家鄉江門，看‘江門號’中歐國際貨運班列邁上‘新絲路’” (*Liu Dehua xiang quanqiu tuijie jiaxiang Jiangmen, kan ‘Jiangmen hao’ Zhong Ou guoji huoyun banlie maishang ‘xin silu’*, Andy Lau promotes his hometown Jiangmen to the world, and sees the “Jiangmen” China-Europe international freight train joining the “New Silk Road”), <https://www.youtube.com/watch?v=TYRAithWfHC> (accessed on 16 September 2022).

from that of the entrepreneur or the consumer, ephemerally and metonymically represented through the DJI drone's occasional on-screen appearance.

Conclusion

To conclude the examination of human-nonhuman entanglements in future-making practices stemming from Shenzhen, I turn to *AI 2041*, which contains ten science fiction stories written by Chen Qiufan. Following each story is Kai-fu Lee's analysis of the related areas of technological development, from natural language processing to autonomous vehicles (AVs). In Chapter Six, "The Holy Driver," Shenzhen makes an impressive appearance. Chamal, a twelve-year-old Sri Lankan gamer recruited by a Chinese company to pilot AVs, "marveled at all he was seeing" upon his arrival at the Shenzhen Bao'An International Airport: "Everything here was colossal and brand-new" (p. 229). The boy is awarded the trip to Shenzhen for his excellent performance at the company, having been told that his employer wanted to "help develop a game that might change the future of driving" (p. 214). Soon, he finds out that the "games" are real rescue missions in actual locations, including the Greater Bay of China. In Shenzhen, Chamal gets into a comfortable self-driving car, and his local contact informs him: "Most of the roads and vehicles in Shenzhen support L5-level autonomous driving now," with different vehicles dispatched by a "smart control system" (p. 230). These are the smart city technologies that China has been building in Sri Lanka – a key site of China's One Belt One Road Initiative officially launched in 2013 – and which Chamal's father fears will displace people like him who drive for a living in Colombo.

After the Shenzhen experience, "Chamal felt that he'd witnessed the future in one afternoon – although he wasn't sure whether it was the same future that Junius (his uncle) had mentioned." This future is not as "foreign, grandiose, and immensely confusing" as he had thought. Technology here was no longer "like Father's car, in which straightforward, countable components (...) had been assembled piece by piece." Rather, "technology was more like Mother's favorite sari: The drape was delicate gossamer (...) yet when Mother folded it and wrapped it around her body, the sari looked different, like layers of hazy clouds bundled together and solidified into a definite, concrete shape." In the end, Chamal overcomes his reluctance to continue working for the company back home when an emergency arises. After he saves a group of hostages using a combination of virtual reality and AV technologies, his Chinese boss tells him: "I just wanted you to know that you are not the cost of creating the future... You are the future" (p. 292).

The depiction of technology as adaptable to the human body like a "sari" brings to mind the cyborg figure of the human-drone assemblage, echoing an optimism that permeates DJI's branding, the *LFGB* series, and the "Sailing to the Greater Bay Area" New Year Concerts. Yet the return to the (subaltern) human not as "the cost of creating the future" but as "the future" resonates with the attention paid to the workers set to be replaced by robots in the novel *Made in China Intelligently*. In this way, the story invites further inquiry into the fascination with nonhuman agents in an era of "intelligent manufacturing" in China. The robot and the drone, two dominant

figures in *Happy 2042*, are merely two among many technological actors envisioned in futuristic cultural texts such as *AI 2041*. While both artifacts reflect a techno-fetishism oriented towards the future as a site of economic efficiency and productivity that perpetuates uneven relations of power between humans, they also point to technological futurity as a fertile realm of meaning-making conjoining the human body and the nonhuman machine. China's President Xi Jinping, at the 40th anniversary of the city's birth, highlighted Shenzhen's role as "a pioneering demonstration zone of socialism with Chinese characteristics," and as "the brand-new city" created out of "blank paper" that is no less than "a miracle in the history of world development created by the Chinese people."²⁶ It remains to be seen whether this emphasis on "the people" will continue to inform the contours of the Chinese Dream as the human-nonhuman assemblages emerging in Shenzhen partake in the making of Greater Bay visions.

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26. "习近平在深圳经济特区建立40周年庆祝大会上的讲话" (Xi Jinping zai Shenzhen jingji tequ jianli 40 zhounian qingzhu dahui shang de jianghua, Speech by Xi Jinping at the celebration ceremony of the 40th anniversary of the establishment of the Shenzhen special economic zone), *People.cn* (人民網), 14 October 2020, <http://cpc.people.com.cn/n1/2020/1015/c64094-31892362.html> (accessed on 23 November 2023).

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