

Chinese Science Fiction in the Anthropocene

Jessica Imbach
University of Zurich, Switzerland
jessica.imbach@aoi.uzh.ch

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Abstract

A green future has become a central promise of the Chinese state and the environment is playing an increasingly important role in China's bid to promote itself as a political alternative to the West. However, Chinese state environmentalism and its promotion of "ecological civilization" (shengtai wenming 生态文明) have so far proven more aligned with political interests rather than environmental goals. At the same time, low-orbit industrialization as a response to the climate change or the resurgent fantasy of population control as a necessity from the standpoint of biology in environmentalist discourse are increasingly entangled with anxieties and speculations about Chinese visions of the future. Using Liu Cixin's short story *The Sun of China* (*Zhongguo taiyang* 中国太阳, 2001) and the 2019 blockbuster science fiction movie *The Wandering Earth* (*Liulang diqiu* 流浪地球) by Frant Gwo as its point of departure, this paper discusses how current narratives of the Anthropocene are reflected and negotiated in Chinese science fiction. While both works demonstrate the symbolic and economic importance of science and technology to China's growth and self-image, they also reveal that we cannot separate questions of the planetary from the historical contexts, in which they emerge.

Keywords: Liu Cixin, science fiction, China, Anthropocene, environmental crisis.

Resumen

Un futuro verde se ha convertido en una promesa central del Estado chino y el medio ambiente desempeña un papel cada vez más importante en el intento de China de promocionarse como una alternativa política a Occidente. Sin embargo, el ecologismo del Estado chino y su promoción de la «civilización ecológica» (shengtai wenming 生态文明) han demostrado hasta ahora estar más en consonancia con los intereses políticos que con los objetivos medioambientales. Al mismo tiempo, la industrialización de órbita baja como respuesta al cambio climático o la renaciente fantasía del control de la población como una necesidad desde el punto de vista de la biología en el discurso ecologista están cada vez más enredadas con las ansiedades y especulaciones sobre las visiones chinas del futuro. Utilizando como punto de partida el cuento corto de Liu Cixin *El sol de China* (*Zhongguo taiyang* 中国太阳, 2001) y la exitosa película de ciencia ficción de 2019 *The Wandering Earth* (*Liulang diqiu* 流浪地球) de Frant Gwo, este artículo analiza cómo se reflejan y negocian las narraciones actuales del Antropoceno en la ciencia ficción china. Si bien ambas obras demuestran la importancia simbólica y económica de la ciencia y la tecnología para el crecimiento y la imagen que tiene China de sí misma, también revelan que no podemos separar las cuestiones del planeta de los contextos históricos en los que surgen.

Palabras clave: Liu Cixin, ciencia ficción, China, Antropoceno, crisis medioambiental.

The Anthropocene narrative has undoubtedly raised the stakes on our theoretical and practical engagements with all forms of earthly matter. It has also generated a variety of critical reformulations such as the Androcene, Capitalocene, or Plasticene that bring the

more familiar critiques of anthropocentrism into contact with the often less acknowledged impacts of racism, sexism, colonialism and capitalism on our natural surroundings. In the context of the environmental crisis, the revaluation of non-Western forms of environmental care and resource management plays an important role in the theorization of alternatives to our fossil fuel-based life worlds. For instance, studies of Chinese and Sinophone bodies of environmental knowledge have shed light on the toxic legacies of colonial empire as well as the importance of local practices of environmental care as strategies of resistance against social disenfranchisement (C. Chang). At the same time, growing interest in East Asian environmental thought also reflects the region's economic and political importance in climate change mitigation. However, within China's state-monitored public discourse, chauvinist expressions of cultural and racial difference are continually being popularized through recourse to the environmental crisis. As a result, legitimate criticism of the universalism of the "shared" crisis is increasingly instrumentalized as a launchpad for soft power initiatives and related unofficial cultural enterprises that pit Chinese ecological "wisdom" against an overindulgent lifestyle in the West.¹ The ideological kinship of culture and species exceptionalism notwithstanding, the Chinese state's vision of "ecological civilization" (*shengtai wenming* 生态文明), for instance, has in recent years become increasingly framed as green China's struggle to overcome the dark and polluting culture of the West (Hansen et al.).

This is problematic for at least two reasons: Firstly, it assumes that China has at least up until the last few decades not participated in any environmentally damaging practices. This assumption is based on a romanticized notion of Chinese nature philosophy and art that has very little to do with the modern discourse of sustainability and ignores pre-industrial forms of pollution and degradation. As environmental historians have shown, resource extraction and the reshaping of the natural surroundings took place throughout China's imperial history (Elvin). Secondly, and more problematically, it recuperates a conservative notion of culture as a metaphysical construct that transcends history and thereby *survives* Western modernity. Although the rise of cultural essentialism and ethnic Han-nationalism in China is tied to the rise of populist movements across the globe (Zhang), it is noteworthy that this discourse has taken on an explicitly eco-nationalist direction. While the "ethnic supplement" (Chow 5) that distinguishes for instance *Chinese philosophy* or *Chinese science fiction* from (Western) *philosophy* and *science fiction* reflects the continued marginalization of the non-West, the environmental crisis is also giving the Chinese state's bid to position itself as a cultural alternative to the West both scientific legitimacy as well as political credibility.

How can we thus locate China within the Anthropocene story without un- or other-worlding Chinese culture? Rather than untangle this complex knot of Anthropocene critiques and nationalist appropriations, I propose in this paper a more modest

¹ An example of this dynamic is the case of the food vlogger Li Ziqi. With 12 million subscribers on YouTube, her (very meticulously produced) videos on traditional craftsmanship and life in the countryside are suffused with a pastoral romanticism that not only finds an audience in China and abroad, but also aligns with Xi Jinping's new era ideology and its appeal to cultural workers "to tell China's story well" (*jianghao Zhongguo gushi* 讲好中国故事).

intervention via a reading of recent works of Chinese science fiction. More specifically, I read the phenomenal rise of Chinese science fiction against the horizon of China's advance to the world's second largest economy, the looming industrialization of outer space as well as the entanglements of population control narratives with global imaginaries of ecological Armageddon. Whilst the critical work of *decentering* the Anthropocene should go beyond substituting Western with Sino-centric perspectives, I treat Chinese science fiction texts here as local formations of historical experience that constitute cross-cultural "contact zones," to borrow Donna Haraway's use of the term, where cultural and political differences may be more pronounced than elsewhere (Haraway 202).²

Science fiction, both as a genre and a mode of cultural reflection, functions as an important register of creative futurology in the Anthropocene. As Lawrence Buell puts it: "[...] no genre potentially matches up with a planetary level of thinking 'environment' better than science fiction does" (56–57). Thinking about the future inevitably raises questions about habitation, food production, energy management, and resource allocation. Do future societies find social, technological, and cultural solutions to our current problems or not, as the case may be? Although sexism, racism and orientalism can be found throughout science-fiction history, it is also a genre that has, at least since the 1970s, become an important platform for creative engagements with progressive politics, from the feminist writings of Ursula K. Le Guin and Joanna Russ to contemporary solarpunk in art and literature, which takes the climate crisis as its point of departure to imagine solar-energy powered futures (Williams).

The environmental fantasies of science fiction can also help us understand the role of fictionality and speculation in the construction of the environment as a site for the extraction and circulation of value. In speculative finance, for instance, speculation works as a form of "fiction," as value does not require a material basis, as well as a form of "abuse" that turns uncertainties about the future into profit. The pursuit of profit relies here no longer on the production of goods, but rather on a monetization of probabilities and extrapolated futures (Wilkie et al. 5). Speculative environments (in science fiction as elsewhere) confront us not only with how things will or should be, but also reveal how the ecological imagination can serve present interests. Ecological salvation, for example, works within the Chinese state's "China Dream" (Zhongguo meng 中国梦) campaign as well as its current articulation of "ecological civilization" similarly to what Heidi Hoechst in the context of "speculative nationalism" has called a "cultural promise" (Hoechst 1).³ Xi's repeated use of catchy aphorisms such as "blue rivers and green mountains are mountains of silver and gold" reflect the growing importance of environmental stability and the promise of a greener future for the maintenance of Communist rule (Luo and Gao). Nevertheless, in his UN speech in September 2020, Xi Jinping continued to push China's environmental messaging by announcing an ambitious carbon-neutrality goal by 2060

² I thank the organizers and all the participants of the conference "Decentering the Anthropocene: Approaches to the Anthropocene in Chinese and Japanese literature and film" (31.10.-02.11.2019, University of Vienna) for the opportunity to present an early draft of this paper and their helpful comments.

³ For a discussion of the environmental imaginary of the "China Dream"-campaign see Riemenschmitter's "Dreams of Shanshui: China's environmental modernization and landscape aesthetics" (2018).

and urged the world to join China's "green revolution." But this promise of a green future, only attainable through economic growth and technological innovation, has helped the state justify current rights deprivations such as forced evictions and continued support for ecologically damaging practices and industries (Sze). China's green rhetoric notwithstanding, its global investment in coal for example continues to outweigh support for renewable energies (H. Chen). And although China has taken important measures in various sectors such as waste management, its "coercive environmentalism" has in many cases also exacerbated human rights violations and environmental degradation. Accordingly, Li and Shapiro argue that the primary goal of China's "ecological civilization" is not sustainability, but rather the "consolidation of political and epistemic power in the hands of the Chinese state" (23).

The following reading focuses on two science fiction texts by Liu Cixin, *The Sun of China* (*Zhongguo taiyang* 中国太阳, 2001) and *The Wandering Earth* (*Liulang diqiu* 流浪地球, 2000), and especially the latter's eponymous cinematic adaptation in 2019 by Frant Gwo. Environmentalist discourse is a prominent feature of many of Liu's works, but it is generally framed as anti-technological and anti-humanist. For instance, in Liu's most famous work *The Three-Body Problem* (*Santi* 三体2008) a reading of Rachel Carson's *Silent Spring* (1962) convinces the main protagonist Ye Wenjie to answer a message from the alien civilization of Trisolaris, knowing that a reply would reveal Earth's location and lead to the extinction of humanity.⁴ However, my aim is not a critique of Liu Cixin's environmental ideas, but rather to draw out how speculative value, cultural politics and ideology attach themselves in multiple and often contradictory ways to various narratives of futurity in the Anthropocene. This is not to say that science fiction writers are simply doing the state's bidding. Rather I argue that Liu's works can help us understand the fraught entanglements of speculative futurology and eco-cultural difference.

Both *The Sun of China* and *The Wandering Earth* demonstrate how speculative narrations of Earth's future in the Anthropocene, even when they are represented as transcending national interests and feature spectacularly lavish special effects that stand comparison to Hollywood cinema, depend both explicitly and implicitly on the valorisation of local perspectives of historical experience and cultural knowledge. These in turn have triggered various nationalist readings of the environmental crisis, especially in China's censored media landscape. But just as science fiction captures the symbolic and economic importance of science and technology to China's growth and self-image, the works I discuss also reveal the ambiguous interactions between science and politics as well as the global environmental crisis and the local imagination. Indeed, while Chinese science fiction cannot fully withstand the economic and ideological pressures of the state,

⁴ The Trisolarans also spread environmentalist ideas among China's urban elite to lessen interest in technological progress, and the terrorist "Earth Trisolaris Organization" that supports Trisolaris' quest to conquer Earth is led by an American environmentalist who has developed the new philosophy of "pan-species communism" based on Peter Singer's *Animal Liberation* (1975). Although not mentioned explicitly, the cosmic sociology, which is prominently featured in the second volume, appears to be influenced by Richard Dawkins' *The Selfish Gene*, although Liu has stated that he treats both Singer and Dawkins' works as "science fiction" (Liu Cixin, "Books from My Science Fiction Journey").

it also demonstrates that we cannot separate questions of the planetary from the historical contexts, in which they emerge.

The Sun of China and Other Fantasies of Green Growth

Liu Cixin is currently the most well-known writer of Chinese science fiction and one of the most internationally successful Chinese authors overall. His works have received celebrity endorsements by Mark Zuckerberg and Barack Obama and have been translated into more than twenty languages. The watershed moment in Liu's career was his win of the 2015 Hugo Award for *The Three-Body Problem*, which is the first book in his *Remembrance of Earth's Past* trilogy (*Diqiu wangshi* 地球往事).⁵ By the account of most domestic critics and Western media outlets, the award signaled not only the arrival of Chinese science fiction on the world stage, but also epitomized China's emergence as a new center of technological modernity over the last decade. The reception of Liu's works follows the familiar plot of diffusionist narratives of modernization, in which science fiction is read as a metric of technological and economic development. While the assumption that science fiction only emerges from technologically advanced economies is just as erroneous as the conception of modernization as a unidirectional process, Liu Cixin's works reflect how environmental issues are increasingly added into this calculus of development and resonate with the Chinese state's promotion of "ecological civilization" as a tool for the harmonization of environmental protection with GDP growth.

The Sun of China incorporates the environmental crisis in a very straight-forward and matter-of-factual way. It is a near-future science-fiction short story, which recounts how China builds a massive, low-orbit solar panel that performs highly targeted climate surgery to alleviate drought and water shortage in northwestern China, but also to create environmental spectacles across the globe such as a twenty-four-hour day for the Olympic Games. Liu's short story divorces the environmental crisis from human behaviour and creates a narrative of the Anthropocene as a technological and economic challenge to human civilization. In other words, it is a challenge we can solve through technological innovation and extensive low-orbit industrialization. Written in 2001, the story speculates on a future, in which China's heavy industry-driven economic development model creates "a verdant ribbon that traversed northwestern China, slowly turning the yellow desert green" (Liu Cixin, "The Sun of China" 143) and in the end ensures prosperity and peace on Earth.

The protagonist of the story is fittingly a migrant worker, named Shui Wah 水娃, which translated literally means "water child". His pursuit to find "fresh water and money" takes him from washing windows on Beijing's skyscrapers to becoming one of the first cleaners on the solar panel "The Sun of China." Significantly, the novel not only imagines low-orbit as the new frontier of infrastructure development, but also the transformation of work in outer-space, which is no longer predominantly academic, but

⁵ The English translation by Ken Liu was published by Tor in 2014. Ken Liu also accepted the Hugo Award on Liu Cixin's behalf.

rather (at least initially) blue-collar labor. Liu's novel thereby also confronts us with the racialization of global labor: the protagonist has a friendship with the world-renowned physicist Stephen Hawking, who has taken up permanent residence in space. Shuih Wah is instructed not to disturb the celebrity but Hawking himself takes an interest in the former farm boy and together they take long walks across the solar panel, reminiscing about their childhoods. Looking down at Earth, the Chinese cleaner and the British physicist transcend cultural and class barriers to represent a shared experience of human life on the blue marble. But whilst science fiction as a genre often invokes totalities in references to *all of humankind*, *the entire universe*, or *all life on Earth*, Liu's novel nevertheless cannot help but reference the racial configurations of global labor, on which their encounter is premised. Space is where white people retire, but people of color go to work.

The growing popularity and commercial success of Chinese science fiction since the 1990s coincides with the vertiginous growth of China's economy. And the international success of Liu Cixin's works is taking place at a time when China is increasingly looking abroad for opportunities to maintain high growth figures. Under Xi Jinping, China founded the Asia Infrastructure Investment Bank in 2016 and gave its expanded vision for future domestic and global economic initiatives the formal framework of the "Belt and Road Initiative." Besides infrastructure projects, natural resource extraction plays a central role in China's global investment portfolio. The logic of China's extractivist economic strategies is not only a result of domestic necessity but reflects the rising demand for raw materials following the various global financial crises and the more general trend toward the "financialization of nature" (Engels and Dietz 2). But the intensification of Chinese capital and labor going abroad has not only helped the Chinese economy maintain high growth figures, but also coincides with a rise of various nationalist frameworks such as the "China Dream" or "Xi Jinping thought on socialism with Chinese characteristics for a new era" that highlight Chinese difference as a key ingredient to China's success.

The short history of economic development in *The Sun of China* roughly mirrors this economic success story as it follows China's transformation from a poor third-world nation into a space-faring economy. The desert represents here the fantasy of an empty space that awaits development through the miracles of technology and finance. But more specifically, the novel's agricultural theme, and especially the greening of the desert, can be traced back to various works of Chinese science fiction from the early socialist period. For instance, in Chi Shuchang's classic *Elephants Without Trunks* (*Gediao bizi de daxiang* 割掉鼻子的大象, 1956) the Gobi Desert is a rural paradise, where oranges with invisible skins and the novel's infamous elephant-sized pigs grow. Fantasies of greenified deserts reflected the subjugation of nature to the productive fantasies of socialism, incisively also captured for instance in the task of "wiping yellow off the map" in Zheng Wenguang's utopian vignette *Ode to Communism* (*Gongchanzhuyi changxiangqu* 共产主义畅想曲, 1958).

Works such as Chi's and Zheng's express an unfettered scientific romanticism and an idealized understanding of technology that resonated with the Maoist rural

mobilization and its cultural reverberations. In socialist Chinese science fiction this led to a rejection of urban futurism as symbolic of Western colonialism and capitalism. Although the publication of Ye Lingfeng's enormously popular *Xiao Lingtong Travels into the Future* (*Xiao Lingtong manyou weilai* 小灵通漫游未来, 1978) after the end of the Cultural Revolution signaled the return of urban utopianism, and many contemporary works such as Hao Jingfang's award-winning novella *Folding Beijing* (*Beijing zhedie* 北京折叠, 2014) have followed since, agricultural futurism continues to play an important role in Chinese science fiction.⁶

Liu's writings adhere mostly to a hard science fiction protocol, which demands a high degree of faithfulness to the known physical laws of the universe. As such, the genre also relies on the social authority of the natural sciences to anchor and legitimize its fantastic premises. Characteristic for Liu's works is a battle-royal style universe, in which finite resources determine the evolution of social life, emotion is overcome by rationality, and civilizational progress is predicated on technological knowledge. At the same time, the unique history of Chinese science fiction continues to shape many contemporary works, even though Liu's novels depict future change as predominantly technology- and not politically driven. We can locate the insistence on Chineseness within Liu's texts and the various readings of Liu Cixin's works against the gradual displacement of socialist ideology by an emphasis on so-called Chinese characteristics within China's reform policies. While the ideology of socialism continues to play a central role in the maintenance of Communist Party rule and its bureaucratic apparatus, state propaganda such as Xi's "China Dream" foreground the importance of Chinese history and art to China's future.

However, as an aesthetic and imaginative "resource" Chinese socialism is playing an increasingly visible role in contemporary culture production. For instance, references to the Cultural Revolution appear often in contexts that highlight China's current productivity and wealth and function to a certain extent as the ground zero of the current futurological imagination. *The Three-Body Problem*, for instance, starts with a show trial of a counterrevolutionary physicist during the Cultural Revolution and revolutionary aesthetics also play an important role in contemporary Chinese art such as Cao Fei's science fiction movie *Nova*.⁷ However, such references to the socialist period and revolutionary culture also highlight the growing relevance of Maoist utopianism to China's economic imagination, as Maoist visions of fast-paced economic development, the automation of labor and the complete industrialization of the globe resonate with current articulations of Chinese futurism.

Today, the industrialization of outer space—the new "desert" of economic development—and other technological fantasies are no longer unfathomable prospects. Whilst the costs of most projects are still prohibitive, to say nothing of their questionable

⁶ For a historical overview of the history of Chinese science fiction see Song's "Variations on Utopia in Contemporary Chinese Science Fiction" (2013).

⁷ *Nova* was shown at the Centre Pompidou in Paris in the context of Cao Fei's multi-media installation "HX", from 5.06.2019 to 26.08.2019. Direct references to the Cultural Revolution and the revolutionary model opera *On the Docks* (*Haigang* 海港) also appear in her earlier installation "Asia One" (2018).

usefulness and dubious ethics, terraforming Mars, building O’Neill colonies or upgrading humans “to the status of gods via Artificial Intelligence (AI)” (Zylinska 3) are nevertheless becoming increasingly framed as practical solutions to the set of environmental problems that characterize the Anthropocene. This solutionist approach to the environmental crisis is not only evident in the Chinese state’s “ecological civilization” campaigning, but also in the rhetoric of Silicone Valley entrepreneurs and venture capitalists that want to “save Earth” by building space infrastructure.⁸ At the same time, the galactic perspective of the Anthropocene, in which human activity will appear as a mere blip in the stratigraphic record, has also produced various cynical or defeatist views of environmental protection, which maintain that no political or technological solution can save us.

Both solutionist and defeatist perspectives on the Anthropocene can be located within China’s political discourse. Whilst the heat-death of the universe may be a greater certainty than the CCP’s hold on power, taking political action against the regime in Beijing cannot only be dangerous, but is also sometimes framed as similarly futile and “irrational” as changing human behaviour or stopping the Sun’s transformation into a red giant. It is then not surprising that resistance to these narratives of immutability such as the recent Hong Kong protest movements is by state actors often framed as “unnatural” or “foreign”-influenced, while new forms of hyper-patriotic “regime critique” charge Beijing for not acting enough in the interest of self-preservation. In a controversial talk given at the Hong Kong University in 2011, Liu Cixin went so far as to criticize the Chinese government for spending too much on environmental protection and too little on space exploration (Liu Cixin, *Viewing the Present through the Eyes of Science Fiction*). What Liu’s remarks fail to consider is that the environment, as I have already noted, also serves as a political tool to justify and promote economic and social policies that curtail civil rights but facilitate state control and the flow of capital. Moreover, as *The Wandering Earth* reveals, this line of economic development focuses no longer on a comparison to the West, but rather on the construction of a techno-bureaucratic framework that draws moral and political authority from the externalized rationality of quantitative science models.

Surviving the Anthropocene in *The Wandering Earth*

The environmental crisis is also at the center of Frant Gwo’s *The Wandering Earth*, which came out in 2019 for the Chinese New Year celebrations. As a science fiction film with a very dramatic story about humanity’s struggle against rapidly accelerating climate change it is an unusual take on the Chinese Lunar New Year film, which is typically a more lighthearted genre with broad commercial appeal. However, the plot of the movie itself takes place during the Spring Festival and tells the story of Earth’s removal from orbit around the Sun, which is undergoing a sudden transformation into a red giant and thus threatening Earth’s destruction. In order to save Earth, it must be transformed into a spaceship, which necessitates the erection of massive “Earth Engines” across the planet,

⁸ One example is Jeff Bezos’ highly mediatized publicity event in 2019 for his space company Blue Origins (K. Chang). China has also announced plans to build a “space silk road” (Li Guoli et al.).

while all life is evacuated to underground cities. Inevitably, Earth encounters various difficulties on its journey across the galaxy and the main story of the movie unfolds against the threat of Earth's destruction through Jupiter's gravitational force. This vast cosmic drama unfolds in the background of a much more down-to-Earth father-son conflict between the astronaut Liu Peiqiang, who is serving aboard the international space station, and his son Liu Qi, who is part of the rescue team on Earth. The movie can thus also be read as a reconciliatory celebration of the Chinese nucleus family, in which children grow up with their grandparents while their parents work in far-away cities—a story line that does not appear in Liu's original short story. The movie's climactic scene returns to the Spring Festival theme as a celebration of Chinese family values. Despite successfully restarting one of the Earth Engines in Sulawesi, only the sacrifice of the space station can blast Earth out of Jupiter's destructive pull. Liu Peiqiang's decision to sacrifice himself and the space station, which is also a storage bank of Earth's biosphere, goes against initial orders of the United World Government, but Liu insists on reuniting with his son and thereby saving Earth, even if this means his own death.

With box office returns of nearly 700 million, *The Wandering Earth* was a major commercial success for China's film industry and has been picked up by the streaming site Netflix. Although various international publications commented on the film, the reception of the movie took place predominantly among Chinese movie-goers and commentators. On online rating sites such as *Douban* there was an almost immediate separation into two violently oppositional "one-star" and "five-star" camps (Wang). Although some of this dispute was about the objectivity of online movie rating sites, the movie generated a very passionate debate on China's self-representation against the horizon of its growing political and cultural influence in the world.

The catastrophe in *The Wandering Earth* is the Sun's transformation into a red giant, but this distant cosmic event is pulled into the near-future and portrayed in the opening scene through news footage that emulates current climate change coverage.



Figure 1: News footage of the environmental crisis (still from *The Wandering Earth*)

Another explicit reference to the current environmental crisis and China's notorious air pollution appears in a sarcastic comment by Liu Qi on his father's useless advice to look up into the sky whenever he missed him: "But little did I know that in Beijing you can never see the sky!" The name of the artificial intelligence system M.O.S.S., which controls the space station, is another negative reference to nature. Although M.O.S.S. is based on HAL in Stanley's Kubricks *2001: A Space Odyssey* (1968) and is an acronym of "manned orbital space station," its name nevertheless also brings up images of unwanted vegetation that are an omen of M.O.S.S.'s attempt to foil Liu Peiqiang's attempts to save Earth and preserve the space station's biosphere bank. This allegiance of the malevolent A.I. with the bio-bank against the interests of humanity is contrasted with numerous spring references throughout the movie. For instance, one of the early scenes shows a classroom of students reciting Republican-era poet Zhu Ziqing's famous essay "Spring" (*Chun* 春). The scene not only underscores the redemptive horizon of the movie's apocalypse scenario, but also highlights the entanglement of natural restoration and cultural continuity, as generations of school children in China must memorize Zhu's essay.

My discussion of *The Wandering Earth* will focus on how it negotiates the notions of size and quantity, which play an important role both within the filmic and literary texts as well as their reception. Tracing the ways physical properties and scientific understandings of our material world filter through and are shaped by narrative frameworks is one way literary analysis can take account of the "material and ethical entanglement[s]" of the Anthropocene (Zylinska 43). Science fiction, especially, calls attention to the "mediatedness" (Heise 150) of all forms of knowledge, even though, as a cultural mode, it is often placed in proximity to the natural sciences. This is especially the case in China, where science fiction writing was from the 1950s to the 1980s institutionally affiliated with "science popularization" (*kexue puji* 科学普及) organizations (Iovene).

In the original short story, the world is divided into two fractions, those who want to move Earth to a new galaxy and those who want to leave on a spaceship. A science teacher explains to her students that taking Earth with us is the favorable solution, because we are not capable of building even small ecosystems that could sustain life. In the absence of the ability to create new worlds, we must take every step to save this one. In the movie, the gigantic scale of the challenge is responded with a no less gigantic industrialization effort under the leadership of the United World Government.

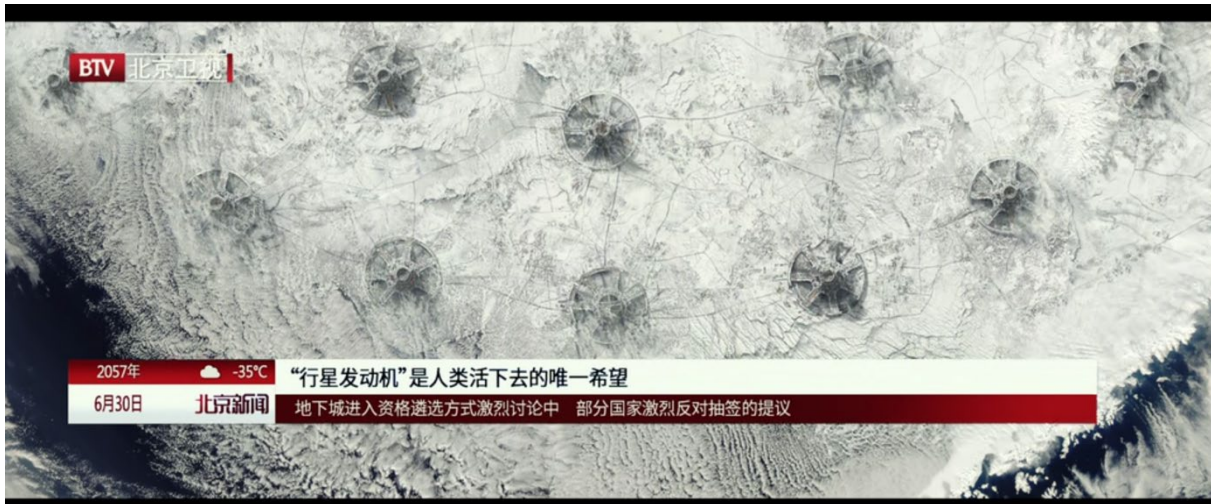


Figure 2: Giant Earth Engines cover the planet (still from *The Wandering Earth*)

Monumental infrastructure such as large dams are given outsize importance in the economic development strategies of third-world nations (Nixon). But in China especially, monumentality is also an important vector of the geohistorical imagination. In a viral talk given for *Guanxueyuan* (*The Observatory* 观学院), the Ted-talk-style show produced by the nationalist news platform *Guanchazhe* (*The Observer* 观察者), Fan Yongpeng, a political science professor at Shanghai's Fudan University, discusses some motifs of *The Wandering Earth* in relation to various aspects of Chinese history and governance. Fan explicitly links the size argument made in *The Wandering Earth* to China's geopolitical role. He draws on physicist Geoffrey West's popular science book "Scale: The Universal Laws of Growth, Innovation, Sustainability, and the Pace of Life in Organisms, Cities, Economies, and Companies" (2017) to make the case that nations act very similar to mammals in the sense that the larger they get, the more energy-efficient they become in terms of their metabolic rate. Drawing an equivalence between biology and politics, the metabolic rate of mammals and the governance of nations, Fan implies not only that China's model of governance is more developed than that of other nations, but also uses (a very problematic and reductionist) so-called law of nature to validate China's geopolitical ambitions in scientific terms.

Frant Gwo and the script writers for *The Wandering Earth* created a short pre-story to the movie, in which the erroneous ideology of leaving Earth on spaceships is mainly supported by the US and would have given rich people preferential treatment. After *The Wandering Earth's* release this pre-story was widely disseminated online and sparked rumors of a possible prequel. But while Fan's analysis builds on the movie's (mainly) implied dichotomy between China and the West, it does not simply express a rejection of the West. Just as environmental stewardship is helping the Chinese state update its justification of party rule for the new climate-conscious era of the Anthropocene, so does Fan's application of the universalist and neutral rhetoric of science and technology reflect a desire for the globalization of what is sometimes referred to as the "China model" that advertises itself as more capable of making the radical policy decisions required to

confront the ecological crisis than Western democracies. This is, as already mentioned, particularly pronounced within the state discourse of “ecological civilization.”

Fan’s presentation reflects how the natural sciences are playing an increasingly important role in Chinese political discourse. This can also be seen in the way *The Wandering Earth* engages with the topic of population quantities and their reduction. China is not only the world’s most populous nation but also the only country that has implemented comprehensive reproductive legislation aimed at population control. One detail in the movie that created a lot of online debate was the system through which access passes to the underground cities are granted. In Liu’s short story access to the cities is not restricted, but when magma from the Earth’s core breaches the narrator’s underground hometown, everybody adheres to a predetermined, age-based rescue protocol.

Past generations once grappled with an ethical dilemma. A man is faced by rising floodwaters and can only save one other person. Should he save his father or his son? In this day and age, it was unbelievable that the question had ever been raised at all. When I arrived in the plaza, I saw that people had already begun to arrange themselves in a long line according to age. At the front of the line, closest to the lifts, stood robotic nurses, each cradling an infant. (Liu Cixin, “The Wandering Earth” 24)

The selection process in the movie version of *The Wandering Earth* is slightly different as it is a lottery system that also takes age and profession into account. This part of Fan Yongpeng’s talk gained the most traction online. According to Fan, *The Wandering Earth* reflects a more just vision of social and political order than Hollywood science fiction cinema, where the affluent can buy their way out of the apocalypse or only Americans survive (his examples are the movies *2012* [2009] and *Interstellar* [2014]). Because saving humanity not only requires a large infrastructure, i.e. Earth and the United World Government, but also degrowth in the sense of a drastic reduction of human bodies, state-controlled extinction both proves scientific rationality and justifies the power monopoly of the United World Government.

Population control has in recent years resurfaced very prominently in environmental debates (Bergthaller, González). Donna Haraway’s position to make kin and not babies is well-known, but infertility pledges by female “Extinction-Rebellion” activists have recently brought the “ecological costs” of child-rearing back to mainstream media attention (Hunt). Environmental activist groups pushing for degrowth as a response to the Anthropocene frequently distance themselves from the austerity politics and their attendant racist ideologies that followed the Malthusian-inspired growth anxieties of the 1960s and 1970s. And many commentators have read the movie’s celebration of Earthly attachment as a “Chinese” response to the planetary crisis (Q. Chen). However, the idea of “spaceship Earth” goes precisely back to the discussion of population growth that took place in the 1970s (Höhler). Notions such as “overpopulation” and “carrying capacity” of Earth were translated into “fictional scenarios in which densely crowded urban spaces came to function as a synecdoche for the planet as a whole” (Heise, *Sense of Place and Sense of Planet* 70). Just as the movie creates an Anthropocene narrative that has turned the planet into the homogenous space of the *anthropos*, so does it obscure these historical entanglements of scarcity politics and economic growth. The vast emptiness of the frozen and deserted Earth surface in *The*

Wandering Earth functions thus not only as a constant reminder of the large-scale genocide event that haunts the movie's more cheerful promise of salvation, but also freeze-captures the Anthropocene in a monochromatic tableau of ahistoric existence: planetary survival relies here not only on the death of a lot of people, but also on a reimagination of the planet as a purely geological formation—a rock. In contrast to the symbolic work of the greened desert, Earth can only survive with minimal human presence.

The trauma of the large-scale extinction event is sized down into the more palatable unit of the family tragedy that opens the movie. In order to secure access passes to the underground city for his son and the grandfather, Liu Peiqiang takes his severely ill wife off life-support. The message in the movie is as ethically problematic as it is clear: Not everybody can be saved, and ranking humans on a scale of usefulness and worthiness is the most just and rational method of ensuring humanity's future.

In 2015, China abolished its one-child policy in response to demographic developments. The theme of population control in *The Wandering Earth* thus does not reflect current policies, but an ecologically motivated fantasy of degrowth. Yet, crucially, population degrowth does not make more room for ecological flourishing, but rather for the massive industrialization of the planetary surface with the erection of the colossal "Earth Engines," which turn stone into energy through "heavy element fusion" (Liu Cixin, "The Wandering Earth" 6) and dot the entire Earth's surface. The movie's focus is thus not on the maintenance of planetary resources, but rather on the political infrastructure necessary for such a large-scale plan. The political monopoly of the United World Government guarantees not only the smooth implementation of the complete industrialization of the Earth, but also that political decisions are based on scientific facts, i.e. climate change and the recognition of Earth as the only viable biosphere and not (democratic) passions.

One important part of the short story is a rebellion against the government that questions the entire *The Wandering Earth* project. In the novel, this rebellion is victorious even though only moments after executing the last faithful officials, the Sun turns into a red giant and vindicates the world government's leadership. What led the general population astray were rumors, conspiracy theories and erroneous studies by NGOs. Although the rescue teams that operate on the Earth surface are heavily weaponized, the movie significantly downplays the dangers of the rebellion by including only one short protest scene at the end of the movie, in which protesters chant "Give us back the Sun!". Just as they are never a danger to the government, so does Liu Peiqiang's decision to go against government orders to abandon Earth not signify a rejection of the political status quo, as his exhortation of family values and China's Spring Festival tradition fit seamlessly into the genre's celebration of heroism and human ingenuity. But another detail is noteworthy in this respect: Again, during the opening scene, which shows news footage from around the world, we learn that union protests in New York are threatening to derail the "The Wandering Earth Project". China, expectedly, does not have to struggle with such opposition.

In the end, everything works out according to plan with a huge techno-military complex supporting the life of a drastically reduced human population. However, this newest science fiction iteration of the overpopulation narrative is not only about an environmental apocalypse, but also about the futurological potential of the Chinese state and its ability to address climate change within a more rational, scientific, and ethical framework than the West. A moralistic celebration of science and world peace, a heavily militarized vision of the future and magnificent displays of apocalyptic technologies and landscapes are of course a mainstay of CGI-heavy science fiction cinema. But for all its deliberately imitative aesthetic, *The Wandering Earth* also fantasizes about a future that vindicates China's one-party rule by never taking the erroneous turn toward a democratic model of governance. *The Wandering Earth* may let us dream of fleeing the Anthropocene to Alpha Centauri, but it cannot escape these fraught entanglements in which current speculations on Earth's future are caught.

Conclusion

In *Imagining Extinction* Ursula Heise makes the important point that environmental issues such as biodiversity and species endangerment are primarily “cultural issues, questions of what we value and what stories we tell, and only secondarily issues of science” (Heise, *Imagining Extinction* 5). But science, technology and economics have taken on strong story-telling capacities in the Anthropocene as well, whereby their data tends to obfuscate the human-dimension of their production. Low-orbit industrialization as a response to climate change or the resurgent fantasy of population control as a necessity from the standpoint of biology in environmentalist discourse are increasingly entangled with anxieties and fantasies about China's role in the future. In the West, neoliberal praise of China's Party-state enabled economic transformations has grown quieter since Xi Jinping's rise to power—and the Covid19 pandemic has made the full extent of China's authoritarian rule even more globally visible, but interest in China's vision of the global future continues to grow at a time when environmental issues are taking on a more prominent role in China's promotion of its own vision of economic development and governance.

The Chinese state also plays an important role in the financial and institutional promotion of science fiction (Gaffric), but the international circulation of Chinese science fiction is not only a result of nationalist interests and intensified speculation about China's global role in the future. Reading Chinese science fiction through the framework of the global environmental crisis brings a more complex historical dynamic into focus, one that reenergizes the techno-utopian fantasies of socialist China, while simultaneously mediating cultural difference through the geohistorical archive of the Anthropocene. Both *The Sun of China* and *The Wandering Earth* reflect how this dynamic weaves the politics of national, ethnic, and cultural difference into a scientifically overdetermined realm of speculative value. However, as a discourse of universality and rationality, science cannot suture the tensions between global capital, world governance and planetary livelihood. Just as *The Sun of China* and *The Wandering Earth* bring us into contact with the historical

and epistemological erasures through which the scientific reality of the environmental crisis is produced, they also confront us with the urgent need to rethink how speculative literature can productively negotiate agency and difference in the Anthropocene.

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